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Gleanings in Bee Culture



VOL. XLII. MAY 1, 1914, NO. 9.

Announcing the New Typewriter Oliver Number 7

We announce an amazing model—the OLIVER NUMBER 7—a typewriter of *super-excellence*, with automatic devices and refinements that mark the zenith of typewriter progress. A marvel of beauty, speed, and easy action. Typewriting efficiency raised to the *n*th power.

The OLIVER No. 7 embodies all previous Oliver innovations and new self-acting devices never before seen on any typewriter. A leap in advance which places the Oliver ten years ahead of its time. So smooth in action, so light to the touch, so easy to run, that experts are amazed. A model that means to the typist delightful ease of operation.

A model that means a higher standard of typewriting, longer and better service.

The NUMBER 7 is now on exhibit and sale at all Oliver Branches and Agencies throughout the United States.

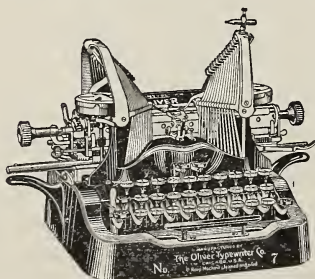
The OLIVER 7 Typewriter No. 7

The Standard Visible Typewriter

The new model has more improvements, refinements and new uses than we can even enumerate here.

The “cushioned keyboard” with “anchor keys” and the new automatic features mean less work for the hands, less strain on the eyes, less manual and mental effort.

With all of these masterly mechanical improvements we have made the machine more beautiful and symmetrical. From every standpoint the OLIVER NUMBER 7 attains superlative excellence.



Nothing you could wish for has been omitted. The new devices, refinements, improvements and conveniences found on the NUMBER 7 represent an enormous outlay and vastly increase its value—the price has not been advanced one penny. We shall even continue in force our popular 17-Cents-a-Day purchase plan, the same as on previous Oliver Models.

The OLIVER No. 7, equipped with the famous Printype, if desired, without extra charge.

You owe it to yourself to see the new machine before you buy any typewriter at any price. Note its beauty, speed and easy action, its wonderful automatic devices. Try it on any work that is ever done on typewriters. Try it on many kinds of work that no other typewriter will do.

It is a significant fact that the typewriter that introduced such epoch-making innovations as visible writing, visible reading, Printype, etc., should be the first to introduce automatic methods of operation.

Oliver Book DeLuxe

We are just issuing a richly illustrated catalog describing the Oliver No. 7. A copy is yours for the asking. There are still openings for more Local Agents in many localities. This is a good time to investigate these money-making opportunities.

The Oliver Typewriter Co.

368 Pine Street, San Francisco, Calif.

SEASONABLE "falcon" Bee Supplies

HIVES—What better chance have you to get your "falcon" hives nailed than just now? Now's the time to place your order for some "falcon" hives. Make use of your spare time by nailing your hives and frames.

SECTIONS—Sections ordered at this time can be folded before the season begins, and you are that much more ahead, which means money in your pocket.

FOUNDATION—This is an excellent time to order foundation and to put it into sections and frames, now when you have the spare time, thus preparing you to go into the season with a good start. Here's what Mr. J. J. Wilder, Cordele, Ga., says about our foundation: "Your foundation is the best I ever bought, and I am more than pleased with it." Mr. Wilder is one of the largest beekeepers in the country.

SUPERS—Supers can be nailed and painted, and filled with sections and starters, by ordering your requirements now. You can not afford to be without supers when the rush comes. Get your order in for "falcon" supers now before the swarming season begins.

Send for our foundation samples and new Red Catalog, postpaid.

Dealers

Everywhere:

New England States, Ross Bros. Co., 90 Front Street, Worcester, Mass.
Central States, The Fred W. Muth Co., 204 Walnut St., Cincinnati, Ohio.
Western States, C. C. Clemons Bee Supply Co., 128 Grand Ave., Kansas City, Mo.
Southern States, J. J. Wilder, Cordele, Ga., and many others here and abroad.

W. T. Falconer Manufacturing Company, Falconer, New York

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"ROOT" "PEIRCE" "ZANESVILLE"

Three words that unlock the possibilities of successful beekeeping.

"ROOT QUALITY" has always represented the acme of perfection in every thing pertaining to bees.

"PEIRCE SERVICE" is fast becoming a synonym for promptness coupled with courtesy and fairness.

ZANESVILLE—the metropolis of eastern and southern Ohio—is the logical distributing-point for the beekeepers of Ohio, West Virginia, and western Pennsylvania; and those more remote can be served with a large degree of satisfaction on account of the superior shipping facilities of this city.

Our 1914 Catalog of Beekeepers' Supplies and Introduction to Beekeeping is now being sent to those on our mailing-list. If you have not already received or do not receive it soon, a postal-card request will insure your receiving it without delay.

Prospects for the coming season are unusually bright, and both prudence and economy would suggest the early placing of your order.

E. W. Peirce, Zanesville, O.

Airdome Bldg., South Sixth St.

"Curiosity Killed a Cat."

That is a well-known old-time saying; but it does not apply to you, because **YOU ARE NOT A CAT.** It is safe for you, and for your wife and your children, to want to know what is to be found in the woods and the fields around you, in the swamps and meadows, the ponds and ditches. Do not hesitate to indulge in the Joy of **CURIOSITY.** You are not a cat. You can satisfy the desire to know by reading

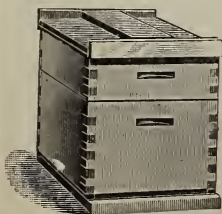
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LEAHY MFG. CO., . 95 Sixth St., . Higginsville, Missouri

HONEY MARKETS

The prices listed below are intended to represent, as nearly as possible, the average market prices at which honey and beeswax are selling at the time of the report in the city mentioned. Unless otherwise stated, this is the price at which sales are being made by commission merchants or by producers direct to the retail merchants. When sales are made by commission merchants the usual commission (from five to ten per cent), cartage, and freight will be deducted; and in addition there is often a charge for storage by the commission merchant. When sales are made by the producer direct to the retailer, commission and storage and other charges are eliminated. Sales made to wholesale houses are usually about ten per cent less than those to retail merchants.

NATIONAL BEEKEEPERS' ASSOCIATION GRADING-RULES

Adopted at Cincinnati, Feb. 13, 1913.

Sections of comb honey are to be graded: First, as to finish; second, as to color of honey; and third, as to weight. The sections of honey in any given case are to be so nearly alike in these three respects that any section shall be representative of the contents of the case.

I. FINISH:

1. *Extra Fancy*.—Sections to be evenly filled, comb firmly attached to the four sides, the sections to be free from propolis or other pronounced stain, combs and cappings white, and not more than six unsealed cells on either side.

2. *Fancy*.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white, and not more than six unsealed cells on either side exclusive of the outside row.

3. *No. 1*.—Sections to be evenly filled, comb firmly attached to the four sides, the sections free from propolis or other pronounced stain, comb and cappings white to slightly off color, and not more than 40 unsealed cells, exclusive of the outside row.

4. *No. 2*.—Comb not projecting beyond the box, attached to the sides not less than two-thirds of the way around, and not more than 60 unsealed cells exclusive of the row adjacent to the box.

II. COLOR.

On the basis of color of the honey, comb honey is to be classified as: first, white; second, light amber; third, amber; and fourth, dark.

III. WEIGHT.

1. *Heavy*.—No section designated as heavy to weigh less than fourteen ounces.

2. *Medium*.—No section designated as medium to weigh less than twelve ounces.

3. *Light*.—No section designated as light to weigh less than ten ounces.

In describing honey, three words or symbols are to be used, the first being descriptive of the finish, the second of color, and the third of weight. As for example: Fancy, white, heavy (F-W-H); No. 1, amber, medium (1-A-M), etc. In this way any of the possible combinations of finish, color, and weight can be briefly described.

CULL HONEY.

Cull honey shall consist of the following: Honey packed in soiled second-hand cases or that in badly stained or propolized sections; sections containing pollen, honey-dew honey, honey showing signs of granulation, poorly ripened, sour or "weeping" honey; sections with comb projecting beyond the box or well attached to the box less than two-thirds the distance around its inner surface; sections with more than 60 unsealed cells, exclusive of the row adjacent to the box; leaking, injured, or patched-up sections; sections weighing less than ten ounces.

HONEY-GRADING RULES ADOPTED BY THE COLORADO STATE BEEKEEPERS' ASSOCIATION, DECEMBER 13, 1911.

FANCY WHITE.—Sections to be well filled, comb firmly attached to all sides and evenly capped except the outside row next to the wood. Honey, combs, and cappings white, and not projecting beyond the wood; wood to be well cleaned; no sections in this grade to weigh less than 13½ ounces.

No. 1.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey white or very

slightly off color. Combs not projecting beyond the wood; wood to be well cleaned; no section in this grade to weigh less than 13½ ounces.

CHOICE.—Sections to be well filled; combs firmly attached; not projecting beyond the wood, and entirely capped, except the outside row next to the wood. Honey, comb, and cappings from white to amber, but not dark; wood to be well cleaned; no section in this grade to weigh less than 12 ounces.

No. 2.—This grade is composed of sections that are entirely capped, except row next to wood, weighing from ten to twelve ounces or more; also of such sections that weigh 12 ounces or more, and have not more than 50 uncapped cells all together, which must be filled. Combs and cappings from white to amber in color, but not dark; wood to be well cleaned.

EXTRACTED HONEY.—Must be thoroughly ripened, weigh 12 pounds per gallon. It must be well strained, and packed in new cans. It is classed as white, light amber, and amber.

STRAINED HONEY.—This is honey obtained from combs by all other means except the centrifugal extractors, and is classed as white, light amber, amber, and dark; it must be thoroughly ripened and well strained. It may be put up in cans that previously have contained honey.

BOSTON. We quote fancy and No. 1 white comb honey at 15 to 16; fancy white extracted honey in 60-lb. cans, 11. Beeswax, 30.

Boston, April 18.

BLAKE-LEE CO.

LIVERPOOL.—The beeswax market is without supplies of Chilean, and the value is about \$37.62 to \$43.74 per cwt. The market for Chilean honey is flat, with retail sales, and values unchanged since our last.

Liverpool, April 1.

TAYLOR & CO.

ZANESVILLE.—No. 1 to fancy white comb is quoted at 16½ to 18½ in a jobbing way; 18 to 20 wholesale. Best white extracted in 60-lb. cans, 9 to 10. These quotations are for white clover. Western honeys rule about a cent less. Market firm, but rather quiet. Producers receive for beeswax 32 to 33 cash, 34 to 35 in exchange for supplies.

Zanesville, April 13.

EDMUND W. PEIRCE.

INDIANAPOLIS.—Fancy white comb is being offered here at 16 to 17 cents per pound; amber comb, 14 to 15; white-clover extracted, 9 to 10 in 5-gallon cans. Much comb honey is being held here; but at this writing there is very little demand. Extracted is in fair demand. Producers are being paid 32 cents cash for beeswax, or 34 in trade.

Indianapolis, April 18.

WALTER S. POWDER.

CHICAGO.—Honey has sold quite well during the past thirty days; and while stocks are not heavy it takes some time to work them off, as buyers take only small quantities at this time of the year. There is not much difference in prices. Fancy grades of white clover and linden bring from 14 to 15; sweet clover and alfalfa, 1 to 3 cts. per lb. less, with the light-amber grades ranging from within 1 to 2 cts. per lb. of the sweet clover; extracted white clover and basswood, 8 to 9; other white grades, 7 to 8; ambers, about 1 ct. per lb. less. Beeswax is selling upon arrival at from 33 to 35, according to color and cleanliness.

Chicago, April 17.

R. A. BURNETT & CO.

ST. LOUIS.—Our honey market is very dull, and but little comb honey is selling. Extracted honey is in a little better demand than comb honey, but stocks here are very light. Comb honey is plentiful, and it looks as if a great deal of it would be carried over into next season. We are quoting honey, in a jobbing way: Southern extracted in barrels, 6¼ to 6½; 5-gallon cans, 6¼ to 7¼; dark, ½ to 1 ct. less. Comb honey, fancy clover, brings 15 to 16; light amber, 13 to 14; amber, 11 to 12; dark and inferior, less; by the case, fancy clover, from \$2.75 to \$3.00; light amber, from \$2.50 to \$3.00; amber, \$2.00. Beeswax is very firm, and quoted at 34½ for prime; impure and inferior, less.

R. HARTMANN PRODUCE CO.

St. Louis, April, 21.

Honey reports continued on page 5.

SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which insures the best quality of every thing. We sell at factory prices, thereby insuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

New 64-page Catalog

Our new 1914 catalog contains double the pages of former editions and requires extra postage. It is filled from cover to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experienced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so that orders may be filled with our usual promptness. Write us your needs.

C. H. W. Weber & Co.

2146 Central Avenue

Cincinnati, Ohio

Gleanings in Bee Culture

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KANSAS CITY.—The supply of comb and extracted is not large—demand light. We quote No. 1 white comb, 24-section case, at \$2.60 to \$2.75; No. 2 ditto, \$2.50; extracted white, per lb., 8 cts.; amber, 7 to 7½; beeswax, No. 1, 30; No. 2, 25.

C. C. CLEMONS PRODUCE CO.

Kansas City, Mo., April 15.

CINCINNATI.—It is an effort to make honey sales, and the stocks of all grades are heavy for this time of the year. Prices are easier than they were. We note many dealers are slashing prices to unload. We are selling fancy comb honey at \$3.65 to \$3.75 per case, wholesale; extracted amber honey, from 5½ to 6½; white extracted, 7½ to 10, according to quantity and quality purchased. We want beeswax at 32 cts. per lb., delivered.

Cincinnati, April 17. THE FRED W. MUTH CO.

DENVER.—The market still remains about the same. It is cleaned up on comb honey pretty well, and looks as though it would be entirely used before the new crop comes on. We are jobbing as follows: Strictly No. 1 white, fancy stock, brings, per case, \$2.52; choice, good color and heavy weight, \$2.39; No. 2, well finished, fair color, \$2.25; white extracted, 8; light amber, 7. We pay 32 cash and 34 in trade for clean yellow wax delivered here.

COLORADO HONEY-PRODUCERS' ASSOCIATION,
Denver, April 22. FRANK RAUCHFUSS, Mgr.

KIND WORDS.

I would as soon think of doing without bread as to think of doing without GLEANINGS, even if I were only for A. I. Root's department, to say nothing about bees. MRS. J. C. GILLETTE.

Camargo, Okla., March 25.

I do not have bees any more, but yet I want GLEANINGS, as it is always clean and uplifting, and especially your Home talks. May you live long, and be spared to carry forward the good work; and may God grant that "at evening time it may be light."

Johnstown, Pa., April 3. A. S. HARRIS.

There is a difference of only a few months in our ages. Since Dec. 1 I have pruned 600 seven-year-old peach trees; made 60 hives as good as the best, and looked after 150 chickens. Bees are swarming now; but with the hives all ready, and frames filled with foundation on wire, I am not worrying. I have lived a temperate life; and a good mother's influence enabled me to live a clean life as a soldier during the Civil war. In fact, she always seemed to be with me. C. G. KNOWLES.

Bakersfield, Cal., March 14.

Dear Mr. Root:—In accordance with your offer in special notices will you kindly mail me the dasheen seed, as I should like to see what it would do here! Also please mail same to Mrs. Lucie Lecompte, Austin, Texas. Mrs. Lecompte is a new subscriber whose name I sent in a few days ago. She is a widow living in Austin. The gentleman who paid for the subscription was so impressed with Our Homes, in March 1, that he subscribed for it for her. I believe she is his niece.

We are still having frosts here, but they will have to stop soon now. My bees are in fine condition, and have gathered plenty every month this winter, and, I think, almost every week.

Vivian, La., March 23. C. E. HAMMOND.

Goldens that are Golden

I have disposed of business in Philadelphia, and will raise all queens that I possibly can the coming season, and will fill all unfilled orders first. Queens are getting better each year. Prices: Select untested, \$1.50; tested, \$3.00; breeders, \$5 to \$10. Send for booklet. GEO. M. STEELE, 30 So. 40th St., PHILADELPHIA, PA.

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Gleanings in Bee Culture

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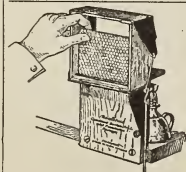
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Minnesota Bee Supply Co.

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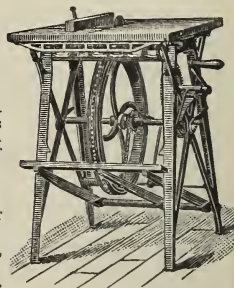
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If you want your wax worked into foundation we are prepared to do this for you at prices equal to those made by other standard manufacturers. Write for price if interested.

The A. I. Root Co., Medina, Ohio

"If goods are wanted quick, send to Pouder."

ESTABLISHED 1889

When You Think of Bee Supplies, Think of Pouder

A very complete stock of goods on hand, and new arrivals from factory with an occasional carload to keep my stock complete. Shipments are being made every day, and the number of early orders received is very encouraging. Numerous orders reached me during our February and March blizzards, which indicates that the beekeepers have confidence in the coming season.

My new catalogs have been distributed. If any of my friends have failed to receive theirs, please write for another. If more convenient you may make up your order from the Root Catalog---our prices being identical. For very large orders at one shipment, write for an estimate, and I can save you something by following the factory schedule.

I shall be glad to hear from my friends as to how bees are wintering and springing, and as to prospects for clover.

Walter S. Pouder

873 Mass. Ave., Indianapolis, Indiana

Indicate on a postal which of the catalogs named below you are interested in ————— They are Yours for the Asking.

CATALOG A.—BEE-SUPPLIES, listing every thing a beekeeper needs for his bees. Our goods are all "Root Quality," and we can save you time and freight expense in getting them. Let us furnish you with an estimate on your needs for the season.

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We carry a full line of supplies at all times.

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Can make prompt shipment of regular-stock goods, as we have a good supply of The A. I. Root Co.'s goods on hand. The rush season will soon be on hand. Our freight facilities are good. Small packages we can rush through by parcel post. Express rates are much lower now also. Let us quote you. Let us hear from you. Beeswax taken in exchange for supplies or cash.

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New Illustrated Catalog of 60 Pages

We want one in every beekeeper's hands. Send postal for one to-day. It is free.

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in exchange for supplies. It will be to your interest to get in touch and keep in touch with us.

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"Griggs is Always on the Job"

The One Subject on which all Beekeepers can agree--- "LEWIS SECTIONS!"

There are many subjects on which no two beekeepers can agree; but here is one they can agree on. They all acknowledge that Lewis Sections are the best to be had—that they excel in quality and workmanship; and when you say Quality and Workmanship you have said all there is to be said about a honey-section.

Let us take you with us through the different operations and show you how Lewis Sections are really made.

First the material, which is the best Wisconsin white basswood that can be obtained, is bought by an experienced buyer by the carload—millions of feet of it. It arrives at the Lewis factory in the board, and is sorted as carefully as a woman picks over strawberries.

The best boards are then sent on their buzzing journey through the factory; fed through a planer watched over by a veteran in the business; sawed up into correct thicknesses and lengths and run through a polisher, the sandpaper polishing both ways of the grain.

Then the particular work commences. Here is where the intricate machinery gets the strips, rabbets them, scores them, dovetails them, and then the finished sections are packed away. But the secret is here: This delicate machinery is cared for like a trotting horse. The Lewis section foreman has been watching it, caring for it, keeping it right for the past thirty years.

He is Still on the Job Making Lewis Sections for you.

No matter what Hives, what Frames, what Supers, and what not you use,

Insist on Lewis Sections

Every crate going out with the Lewis name means something to you. Here is what one of our customers has just written us:

"We have been using the G. B. Lewis Company's No. 1 Sections for several years, and have a *few* of other makes, but find the Lewis goods the best. We have put up about 30,000 sections so far this season, and have not found one section in the lot that was not perfect. We find they fold perfectly, and hold together where some of the other makes come apart. We use the Rauchfuss Combined Section-Press and Foundation-Fastener with Dadant's Foundation."

G. B. Lewis Company, Sole Manufacturers Watertown, Wis.

Thirty Distributing Houses. Send for the name of the one nearest to you.

Send for Our Prices on

BEESWAX

We are paying higher prices than ever before at this season. WHY? Because of the tremendous demand for

Dadant's Foundation

Write at once. We will quote prices F. O. B. here or F. O. B. your station.

DADANT & SONS
HAMILTON, ILLINOIS.

Gleanings in Bee Culture

Published by The A. I. Root Co., Medina, Ohio.

H. H. ROOT, Assistant Editor. E. R. ROOT, Editor. A. L. BOYDEN, Advertising Manager.
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MAY 1, 1914

NO. 8

EDITORIALS

WE wish to call particular attention to the article by R. F. Holtermann, on the importance of drawn combs in practical beekeeping.

The Editorial Staff of the Review

OUR old friend Prof. E. G. Baldwin, of Deland, Fla., is now one of the associate editors of the *Beekeepers' Review*. We congratulate both. By the way, the last issue of our esteemed contemporary is full of good matter; and, what is more, it is a true Association organ devoted to Association matter. Mr. Townsend, the editor-in-chief, is an experienced beekeeper; and that is of supreme importance in the matter of selecting material for publication.

Excellent Wintering all Over the United States and Canada; Clover Prospects

IN the 29 years that we have had editorial charge of this journal, we do not remember a single spring when the reports showed such universally good wintering. This means, of course, that bees throughout the country will be stronger and in better condition for the harvest.

There has been a large amount of rain and snow during the past winter, and this is all very favorable for the growth of clover and other honey-plants; but the precipitation has been so excessive that we fear a drouth may set in along in May or June. The United States Weather Bureau says that one extreme is likely to be followed by the other. We can only hope that history will not repeat itself this coming summer.

Latest from the Apalachicola Apiary

THE latest reports from Mr. Marchant go to show that we have been having at our Apalachicola apiary a heavy flow from

black tupelo—so much so that it has been crowding the queens, interfering with breeding and with the drawing-out of the frames of foundation. The boys were expecting to extract, beginning with the week of the 13th, to give the queens room to lay. Our Mr. Marchant is making a desperate effort to make his big increase; but the cool weather in February and March, and the heavy flow from black tupelo, have been interfering with his plans. He begs, therefore, that he be given a little more time; but the early spring in the North is shoving out the fruit buds ahead of time, and we may have to move one ear of bees ahead of our schedule. Mr. Marchant doesn't like this a little bit.

Cellar Wintering at Medina; Making Increase in the Cellar

WE reserved about 125 colonies at Medina, and the rest, 300, were sent to Apalachicola, as before explained. The Medina bees were left outdoors in double-walled hives until in December when snow was on the ground. They were then brought in on sleds and wagons and put in our two cellars—one under the machine-shop and one at the warehouse which is made entirely of concrete and brick. The walls are so massive in the latter place that a nearly uniform temperature is maintained, and the bees there were practically undisturbed all winter. Some of the colonies under the machine-shop were fed hard candy. The purpose of giving them candy was to stimulate brood-rearing, and it did. Our Mr. Pritchard, who has just taken the bees out, reports that many of them are much stronger now than when they went into the cellar last December, for breeding continued more or less all winter; and even the bees in the warehouse did not lose in strength, but rather gained. There was no loss in either cellar except among four or five that had been robbed of queens and bees for observatory hives in show windows.

Some Big Inspection Work in Arizona; How Did He Do it?

We announce the arrival of a copy of the report of the State Apiary Inspector to the Governor of the State of Arizona, from which we make the following clipping.

Phoenix, Ariz., Dec. 31.

Hon. Geo. W. P. Hunt,
Governor of the State of Arizona.

I have the honor of submitting my report as your State Apiary Inspector for the year 1913.

I was sworn in on the 14th of July, and entered upon my duties as Inspector of Apiaries.

I have inspected 26,838 colonies of bees; 19,858 colonies in Maricopa County; 3630 colonies in Yuma County; 2553 colonies in Graham County; 790 colonies in Pinal County, and 7 colonies in Pima County.

I found 115 colonies diseased with foul brood in Yuma County. I put all yards under quarantine where I found disease, and instructed the owners to destroy the diseased colonies by burning them.

I have appointed one Deputy Inspector for Yuma County, and I think we shall be able to rid the county of the disease.

I have collected from the five-cent inspection fee per colony, \$966.30 to date.

J. P. IVY, State Apiary Inspector.

We have submitted this report to Geo. H. Rea, inspector for Pennsylvania, who has had considerable experience, and who offers the following query:

Arizona Inspector of Apiaries appointed and entered upon his duties the 14th day of July, 1913; closed up his work and made his report to the Governor on Dec. 31, 1913; 147 working days between these dates, inclusive. Inspected 26,838 colonies of bees. I wonder how he did it.

I worked hard last summer, and managed to inspect an average of sixty-five colonies per day, while the Arizona report shows nearly three times that many. Since it is necessary for the inspector to spend practically one-half of his working hours in traveling and in conversation with beekeepers it would seem impossible that so much could be accomplished unless he skipped or skimmed over many hives. Or this might be true: The Arizona apiaries are large, and comparatively close together; but even then the figures, to an Easterner, seem large. I do not raise the question in a spirit of criticism, but desire to learn how my Arizona brother manages to accomplish so much.

How Spraying Liquids to Kill the Codling and Gipsy Moth is Decimating Whole Apiaries

MORE and more we are getting complaints of wholesale poisoning of colonies of bees—in fact, whole apiaries—as the result of ignorant spraying of fruit-trees while in bloom, or the ordinary spraying of shade-trees in New England to stay the ravages of the gipsy moth. It is getting to be a very serious problem in some parts of Massachusetts, where some beeyards have been literally wiped out. It is evident that there has been a widespread call for the article in our Feb. 1st issue, page 91, by a New England Veteran on the subject of "Wholesale

Spraying of Blossoms Causing Wide Disaster." So great indeed has been the demand that the issue containing that article was *entirely exhausted* before we knew it. There are other good things in that particular number, but this spraying danger looms up so large that evidently hundreds of our readers have been asking for copies to lend to their neighbors who practice spraying in season and out of season. On the other hand, it is probable that there are times when spraying in bloom causes no damage. But we have too many reports of how bees have been poisoned to death—whole colonies and whole apiaries killed out—to make the practice safe.

N. B.—Perhaps there are some who would be willing to spare their Feb. 1st issue. If so, send them in so that we can mail them to others, and thus spread the truth where it can do more good.

"The Man who Never Loses any Bees During Winter"

IN 1882 and '83 A. I. Root had a good deal to say in these columns about "the man who never loses his bees." It was during that winter that the heaviest mortality occurred that was ever known; and yet this man, Mr. H. R. Boardman, then of East Townsend, Ohio (now renamed Collins), wintered his bees that year without loss, the same as he had been doing for years before. During the long interval he has been doing the same thing winter after winter; and three years ago, when there was such a heavy mortality, he did it again.

A few days ago we received a letter from Mr. Boardman, saying he had again wintered without loss. We wrote asking if it was in that same beehouse, and whether he had been doing it right along. His reply is worth publishing:

Mr. Root:—Yes, I have wintered again without loss, and have been doing so in the old beehouse of 35 years ago, and am still the man who winters without loss unless I yield to the temptation to do too much experimenting in my wintering methods.

I need not tell you that three years ago was a disastrous winter for the bees; but I wintered without loss and sold off the increase from my stock for \$150 (for orchard pollination), and got a fair crop of honey. My success in wintering is worth all there is in the business now. One hundred colonies is all I care to keep.

Collins, Ohio.

H. R. BOARDMAN.

Mr. Boardman will be remembered as the man who held the secret for many years of how to keep liquid honey from granulating without the use of artificial heat. When we published Mr. E. B. Rood's method of putting the bottles in a solar wax-extractor, our old friend very generously came forward, saying that that was the method he had used; and in view of the fact that the "secret was out," he would tell the public of it.

Mr. Boardman is a man of unusual intelligence, a nature-study man, and a bee-keeper who has just passed his 80th birthday, and this fall we plan to give his method of wintering in an upground beehouse that he has pursued with such success these thirty-five years or more. A full description was given by the writer, with a cut of his beehouse, in these columns, April 15, 1889, page 319.

Orchardists Asking for Bees

It is remarkable how the orchardists of the country are waking up to the importance of having bees in the orchard. The facts presented in another column, by one of the best pomologists of the country, are well worth reading. In this connection it will be interesting to note that a big demand for bees is springing up all over the country from fruit-growers—not because they have the bee-fever or wish to produce honey, but because they have learned that they can produce more and better fruit by having bees on their places.

By the time this journal will have reached our subscribers, many of our beemen will be locating outyards. Do not forget to help your neighbor the fruit-grower, and help yourself by spreading the truth about bees and orchards. Tell how the bees are actually breaking down the branches; of the loads of fruit they help to make possible on the trees. By spreading this knowledge it will be easier to secure fine locations, either at no cost to yourself, or at an insignificant rental price. Up-to-date fruit-growers are often willing to pay you for putting bees on their places instead of you paying them for the privilege. But the policy of the beekeepers should be to give and take on equal terms—put the bees on the place without charge either way.

In locating beeyards do not forget to fence them. Woven-wire fencing is recommended by Wesley Foster in his department in this issue; and it is about as good and serviceable as any thing we know of.

That "Comfortable Feeling" Over Those Indoor-wintered Bees in Medina

IN Mr. Byer's department in this issue, page 337, he says he cannot understand why the cold February and March we had in the Northern States should cause us to have a comfortable feeling that our bees at Medina were in cellars, in a climate as "mild" as that in Ohio. "Mild" climate in Ohio! It makes us fellows south of the

lakes smile a little. Yes, it is milder—but we have changeable damp weather. It may be down below zero for a few days, and then the next week the temperature may be 50 above. Breeding will get nicely started when another cold snap will come, killing both brood and bees trying to hover it. A long steady spell of cold weather, the hives well protected with banks of snow, is not nearly so hard on bees as extremes of cold and warm, with little or no snow. With these conditions of climate in February and March we could not help having a "comfortable feeling" that our Medina bees were in our big cellars where the temperature does not vary more than five or six degrees, and where there is plenty of fresh air.

If we had a cellar under the house, that was not frost-proof, small and damp, and had 150 colonies to winter, we should be decidedly more comfortable if those 150 colonies were housed in double hives *outdoors*. As the majority of people do not have an ideal cellar for wintering, the majority of beekeepers in Ohio do better with bees outdoors, providing, of course, there are suitable windbreaks and warm dry packing around the brood-nest.

"Slightly Exaggerated"—Our Queen Business in Southern Florida

WHEN the newspapers announced that Mark Twain was dead, he said the report was "slightly exaggerated." This is somewhat the situation in regard to a newspaper report which inadvertently crept into our columns, appearing on page 5 of our April 15th advertising section. The report went on to say that "E. R. Root, son of A. I. Root, millionaire honey-producer, and king of the bee business," etc., had "practically decided" on establishing in Pompano, 18 miles north of Miami, "a colony for raising queen-bees." Evidently the reporter thought that "colony" was not big enough; for later on he says that we were going to establish a "queenery that would mean several hundred more bee colonies." The interview is indirectly attributed to Mr. O. O. Poppleton; but with his usual accuracy of speech we are sure he did not authorize any such statement, much less any reference to A. I. Root as a "millionaire honey-producer," for this, of course, is very greatly "exaggerated." A. I. Root himself will be amused if not disgusted, as were we.

The facts are these: We were making a tour of Florida, investigating, but have come to no conclusion as yet. We have made tentative arrangements to raise queens at Pompano providing no other place can

be secured. The objections to Pompano are the exorbitant freight and express rates on bees as a distributing point; and dragonflies in April, that kill practically 90 per cent of the queens that are out to mate; and the month of April is the one month in all the year when we could least afford such a loss. The point in favor of Pompano is that bees and queens can be bred every month in the year.

We might say in this connection that there are several other exaggerated newspaper reports concerning our trip into Florida. The Florida newspapers are proverbially inclined to boom their own town; and if they can get a scintilla of truth they frequently exaggerate it beyond all semblance of fact.

A typewritten copy of the foregoing was submitted to A. I. R., who adds:

I am not a millionaire—never was, never expect to be, and don't want to be. I am sure God did not intend I should. I am not built that way.

Some More Important Evidence Showing the Value of Bees as Pollinators

*Report of the Twentieth Annual Convention of the
Massachusetts Fruit-growers' Association Held
at Springfield, Mass.*

A STENOGRAPHIC report of the twentieth annual convention of the Massachusetts Fruit-growers' Association lies before us. A careful perusal of this will convince the most skeptical of the value of bees in the making of more and better fruit from the standpoint of the fruit-grower. It contains several addresses of more than ordinary value—among them one from Dr. Burton N. Gates, Professor of Bee Culture at the Amherst Agricultural College, on the subject "Bees Indispensable to Modern Horticulture." This is followed by a paper by Wilbur M. Purrington, entitled "The Value of Orchards to the Beekeeper." This, again, is followed, after some discussion, by a paper from Earl M. Nichols, of Lyonsville, on the subject "Beginning with Bees, and How to Secure Stock." So far the evidence is from the standpoint of the beekeeper; but Prof. W. W. Chenoweth, the Assistant Pomologist at the Massachusetts Agricultural College, Amherst, next follows by a paper on the subject "Importance of Bees in the Cross-fertilization of Fruit" from the standpoint of the orchardist, and for that reason will have more weight with the fruit-grower. Our space is too limited at this time to permit us to give this address in full; but we take pleasure in presenting Prof. Chenoweth's summary, which will be read with unusual interest:

A thoughtful consideration of all the evidence be-

fore us, it seems to me, fully warrants the following general conclusions:

1. All tests, wherever made, and all general observations, agree that many varieties of apples, peaches, pears, plums, sweet cherries, and grapes are unable to set a crop of fruit when limited to their own pollen.

2. Some varieties of the above-named fruits are partially self-fertile, and a few are apparently wholly self-fertile, though the degree of fertility varies between rather wide limits, depending upon location, season, vigor of trees, etc.

3. All investigators agree that, as a general rule, the fruit resulting from crossing, even in self-fertile varieties, is larger and better developed than self-fertilized fruit. This is explained by saying that foreign pollen furnishes a greater stimulus to growth because it is more acceptable to the pistil, and not because it transmits size character of the variety from which it came.

4. All evidence at hand contradicts the theory that the wind renders any dependable assistance in bringing about cross-pollination among the above-named orchard fruits, while it does emphasize the importance of the honeybee as an agent in rendering this great service to the fruit-grower.

5. It has been shown beyond dispute that spraying open blossoms with arsenical poisons is injurious to bees. The orchardists who persist in this practice secure little if any benefit which would not result from either an earlier or a later application. Also he runs the risk of injury to the unfertilized open flowers, in addition to leaving thousands of poisonous cups which kill the goose which lays him golden eggs.

6. The character of the weather at blooming time is the final determining factor of the fruit crop. Cool, cloudy, or rainy weather at this season not only affects the development of the pollen, the growth of the pistil, and consequent development of ovules, but the action of insects is also reduced to the minimum, thereby lessening the chance for cross-pollination. It has been shown that excessively cool weather at blooming time often renders self-fertile varieties incapable of self-fertilization, though they still retain the ability to be cross-fertilized.

In conclusion it seems safe to say that the fruit-grower cannot afford to make very extensive plantings of any of the orchard fruits under discussion without making provision for abundant cross-pollination. This is most easily and practically done by choosing commercial or standard sorts that will bloom at approximately the same time, setting these varieties in small blocks of only a few rows each, and by establishing a few colonies of honeybees near or in his fruit plantation.

We do not suppose that this report as a whole is available to any except members of the Massachusetts Fruit-growers' Association, of which Mr. F. Howard Brown, of Marlboro, is Secretary and Treasurer, and Harold L. Frost, of Arlington, President. Those interested might possibly secure a copy by applying to either of these gentlemen.

A copy of this valuable report ought to be in the hands of every fruit-grower, as we consider it one of the most valuable that was ever published—valuable because of the data presented showing the intimate relationship that should exist between the beekeeper and the fruit-grower. Some very full information is given on the subject of pruning and spraying, and is the more valuable because it is clear up to date.

Dr. C. C. Miller

STRAY STRAWS

Marengo, Ill.

BEES came out of cellar, April 13, "in apparently good condition;" white clover looks promising, and dandelion blossoms are just opening. Glad I'm a beekeeper!

HELLO, GLEANINGS! I suppose you feel quite smart in your new dress. You do look rather nice. When all the women are coming out with their new Easter bonnets it's only fair you should have new head-gear.

THE *Chicago Record-Herald*, one of the leading dailies of Chicago, if not the leading daily, has come out with the announcement that it will accept no more liquor advertisements; also two Pittsburg dailies. That means a whole lot.

MENTION of workers taking a hand in a queen-fight reminds me that years ago I had several cases in which, after the introduction of a queen, I found a good many dead workers freshly thrown out. I took it that there were two factions, one for and one against the queen, resulting in a battle.

MY bees were fed as soon as placed on summer stands. A solid frame of sealed honey was shoved into the entrance under the bottom-bars (that's only one of the advantages of that two-inch space under bottom-bars). Then a little board was tacked in front, leaving an entrance about $\frac{3}{4}$ inch square.

ARTHUR C. MILLER catches it, page 286. That's right, Bro. Crane; he's always making trouble, and you never know where he'll start up next. After all, aren't you drawing it a bit strong to make "at least 35 lbs. of heavy syrup" the amount thought needed to be fed October 1? It may be true in some cases, but I think they are very exceptional. I doubt if I ever thought one of my colonies needed to be fed more than 25. Please remember that for every one like you there are 20 who will guess that a colony will get along with a good deal less than it really needs. Here's the way it's likely to be: "I guess that colony will squeeze through with 10 pounds;" and then when he doubles that and adds half as much more, like enough he'll have it about right.

I TOOK a well-filled section that weighed 14 oz., carefully cut out the comb, melted it, and rinsed the resulting cake of wax. The wood (of course slightly daubed) weighed 31.6 grams (1.115 oz.); the wax, 13.27 grams (.468 oz.). Deduct weight of wood and wax from 14 oz., and we have left 12.417 oz. as the weight of the clear honey. The consumer who buys such a sec-

tion at 25 cents pays at the rate of 32.21 cents a pound for his honey, since the wood and wax are of no value to him. If he can buy extracted honey at 15 cents a pound he is paying 17 cents for the looks and possibly better quality of comb honey. Yes, I know I'm a comb-honey producer, but the truth's the truth. [If you will turn to the last edition of the A B C and X Y Z of Bee Culture, page 608, and the former edition under the heading of Wax, you will find that your figures approximate very closely those made by ourselves. For instance, we state that a 16-ounce section of honey consists approximately of $14\frac{1}{2}$ ounces of honey, a little over $\frac{1}{2}$ ounce of wax, and about an ounce of wood. When we take into consideration the fact that your section weighed only 14 ounces to start on, your figures are very close to ours. But look here, doctor; don't you remember that honey in the comb, if well ripened, has a flavor and bouquet that the same honey out of the comb does not have? We never tasted any extracted honey quite the equal of a correspondingly fine article of comb honey from the same source. Wax itself has an aroma all its own. Separate that wax from the honey, and a part of the delicate flavor is gone. The process of extracting, exposure to the air; and the process of heating to prevent granulation, robs virgin honey of a slight amount of its original flavor. The original flavors in honey are very volatile, and are easily driven off by exposure to air or heat or both. While the ordinary consumer, perhaps, may not notice the difference, the connoisseur will; and any consumer, if he has a chunk of comb honey and a small amount of extracted honey from the same comb, will detect a slight difference in favor of the article in the comb, providing the liquid article has been extracted several days. Pardon us for quoting our A B C and X Y Z of Bee Culture again; but you will recall that we have made a strong point of this under the head of Comb Honey, and again under Extracted Honey. We sent these articles to a number of honey connoisseurs, and they all agreed that our judgment of the relative merits of the two kinds of honey were correct. Yes, sir, 'e; the writer believes that we ought to emphasize the fact that honey in the comb well sealed is a little superior to the same honey out of the comb equally ripened. If this were not true, the general public would not be willing year after year to pay more than twice the price for comb honey.—Ed.]

J. L. Byer,

NOTES FROM CANADA

Mt. Joy, Ont.

LATE COLD SPRING.

As intimated in the third paragraph below, we are having a very late cold spring. Bees had a fine flight March 17, for which we should be thankful indeed; for since that date we have had nearly a month without a day for bees to fly; but as the bees are held back, so is vegetation of all kinds, so perhaps the late spring may not be so bad after all.

* * *

CLOVER PROSPECTS.

What little clover went into winter quarters appears to have wintered well so far, although the cold drying winds of April that we are having are not helping matters much. But the frost is about all out of the ground; and with no frost present, we rarely have the "heaving" of the clover as is the case when we have thawing by day and freezing by night, when the subsoil is still frozen hard from the winter's cold.

* * *

DID THE COLD SNAP OF THE NORTH GO INTO THE SOUTH?

While we have to report a late cool spring, friends in North Carolina and other southern-central States report to me that their season is unusually early. But these reports came a few weeks ago, and I have been wondering if our cold snap might not be extending into the sunny South and freezing some of the extra-early vegetation down there. I sincerely hope such has not been the case, but shall watch with interest for future reports from various regions.

* * *

WINTERING IN CANADA AND OHIO.

Commenting on the unusually cold weather during February and March of this year, our editor expresses himself as not being sorry that their bees are for the most part in Florida, and the rest in cellars in Medina. (April 1, editorial.)

I can understand the matter in regard to the Florida outfit, for I believe they expect to do more than double the stock sent down there before bringing north again in the spring; but why such thankfulness about having the bees in the cellar in a climate as mild as that in Ohio? I have been in apiaries this spring where the temperature went below 40 two or three times in February, and the bees had no flight between Nov. 23 and March 17; and since the latter date they have been shut in steady till date of writing (April 13). During February only four or five mornings recorded higher

than zero; and yet for all that the bees have not wintered badly by any means. As I have often stated, I cannot understand these differences in regard to outdoor wintering; and perhaps at this time the editor will more fully explain to some of us wondering mortals up here in the "cold belt." [We have much more to fear in a frequent *changeable* climate such as we have in Ohio than you have with your colder steady cold. For that reason, good cellars such as we have, where the temperature can be maintained, is better for our bees than the uncertain weather outside. We shall have more to say on this point in our editorial department.—Ed.]

* * *

WILL SPECIALIST BEEKEEPERS EVER AGAIN SUFFER SEVERE WINTER LOSSES?

This difference in conditions should be a factor in making calculations for the future; for we are quite safe in assuming that winter losses among specialists will never be as heavy as was the case among the great number of small beekeepers a few years ago. Some few have presented the argument to me when professing to have no fear of overproduction, saying that a bad winter or two would soon even up matters again; but as already intimated, I don't believe that there is apt to be any very general knock-out very often, owing to the business being more in the hands of specialists who naturally give the bees better care than do those running a few on the farm simply as a side issue.

* * *

THE TEMPORARY SLUMP IN HONEY PRICES AND THE CRAZE TO GO INTO BEEKEEPING.

Although there has been undoubtedly a slump in honey prices in Ontario (only temporary I hope), this fact has in no way affected the craze for people to go into beekeeping; and as a result the demand for bees for spring delivery is very keen. Owing to heavy increase during the past few years in many places with uniformly good wintering, I believe that the heavy losses of some years ago are more than made up, and that to-day Ontario has the most bees in its history. Of course there may not be as many men keeping bees as formerly, for the farmers that were wiped out during the bad years have for the most part never attempted to get bees again—at least that is the case in our vicinity. But the increased number of specialists, with their larger holdings, more than make up for these exceptions.

BEEKEEPING AMONG THE ROCKIES

Wesley Foster, Boulder, Colorado.

STOCK IN BEE-YARDS MAKING THE BEES ILL-NATURED.

Last fall one-half of one of my out-apiaries was moved into Boulder close to the foothills. The colonies left at the outyard are in a pasture where horses run during the winter and early spring. There is no fence around the hives, and the horses have walked around among the hives more or less, but not enough to cause any trouble except that the bees are very cross. The bees at the home yard that came from this outyard are as gentle as need be. The horses have apparently irritated the bees and spoiled their tempers.

* * *

WOVEN-WIRE FENCE FOR OUT-APIARIES.

For an out-apiary fence that can be quickly built and as quickly taken down nothing can surpass a woven-wire one, four feet to five feet high. If a barbed wire is run around the top it will prevent horses reaching over and perhaps breaking down the fence. Posts made from old iron pipe 2 to 2½ inches in diameter sharpened at one end, and driven into the ground two feet or more are good. Holes are drilled through the pipe, and the fence fastened to the posts with wire. A good strong woven-wire stock fence is reasonable in cost, and, if five feet high, will keep out stock and also be a protection from molestation by thieves or mischievous boys.

* * *

FULL SHEETS VS. STARTERS IN SECTIONS.

With a rapid uninterrupted flow from alfalfa and sweet clover, or, for that matter, from any honey-plant, the advantages of section honey-boxes filled with full starters over a small starter are not great. With such a honey-flow an inch starter the full width of the section across the top, and a five-eighths starter the full width of the bottom, will give as fine a filling as a 3½-inch top starter and a half-inch bottom starter. There seems to be an advantage in the bees drawing out the comb in one cluster and then filling in around the edges later. They will leave scarcely any more pop-holes at the edges than they will make by gnawing out in a full sheet. There is an advantage in the full starter because it does away with the uneven effect of the store comb often built; also the filling of the sections is better in a slow or intermittent flow.

This season I am trying out the plan of putting in full sheets of extra-thin founda-

tion, fastening in with a wax-dropper on the four sides. I expect also to put up several thousand sections with light brood foundation in full sheets waxed in on all four sides. Several thousand sections will be used with 2½-inch top starter, and about a half-inch bottom starter. Then a number with one-inch top starters will be used, and a half-inch at the bottom. A full sheet fastened at the top only, and coming as close to the bottom as possible, will also be used. Perhaps what I find out will not be valuable to any one but myself.

[We should be glad to get your report of this at the close of the season.—ED.]

* * *

PROSPECTS FOR COLORADO EXCELLENT.

Prospects still continue favorable. Alfalfa is in excellent condition, and sweet clover will not be outdone. Weather conditions have been ideal so far. The precipitation is more than an inch above normal so far for 1914, and the ground was saturated from the big snow of December, 1913. We have very favorable prospects for a good flow from dandelion, fruit-bloom, and other spring flowers, so that those who make increase early should be able to build all colonies and increase up ready for the surplus flow from alfalfa and sweet clover in July and August. Some farmers are predicting a dry May and June on account of the abundance of spring moisture; but there will be plenty of water for irrigation during May and June; and with hot weather in July and August, and a few good rains, we should get honey. Cold rains always hurt us if they come in the summer; and if we get a cold rain the middle or latter part of August, our flow so far as surplus storage goes is off for the comb-honey man.

My estimate would be that there are 25 to 35 per cent more colonies in Colorado than in 1913, and bigger and stronger colonies could hardly be desired. Six frames of brood the 15th of March is considerable for a colony; but I had them, and they went through a cold spell of 10 above zero without the loss of any sealed brood that could be found. The colony that can do that is a strong one, to my notion.

This seems to be a year when we can easily fill all our empty combs with bees and get a honey crop too; but there is many a slip, as we fully realize. A hailstorm, grasshoppers, cold rains, or excessively dry weather may each or all discount our prospects,

BEEKEEPING IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.

On page 137, Feb. 15, the words "lumber pines" should read *limber* pines. I make this correction because the pines at that elevation are not fit for lumber, being of a very scrubby growth.

* * *

GOLDENS SHOWING UP WELL.

The golden queen that was at the head of my best producing colony last year is still doing fairly well at the middle of her third season. As a breeder she is worth much, and will be used for that purpose. I have goldens and leather-colored, but am decidedly partial to the goldens, not alone because they are bright, but because they are producing results, and are attractive besides.

* * *

IMPORTANCE OF PLENTY OF COMBS.

There is nothing that increases the yield like plenty of combs to catch the raw nectar. A colony that has to wait for a super of combs to be finished ready for extracting, to give it more room, is losing valuable time. A friend, whom I consider one of the best beekeepers in the South, said to me the other day, "If I had plenty of empty combs I could get from a third to a half more honey during the season." This gentleman has not lost a colony in two years. [See article by R. F. Holtermann, and footnote on page 331, this issue, that supports your position.—Ed.]

* * *

FEEDING IN THE SPRING.

Arthur C. Miller, page 131, says, "Stimulative feeding for spring should always be done in the fall," which reminds me of a time in my boyhood days when my mother instructed me how to feed the pigs corn. She said, "Give them ten ears for supper and ten for breakfast." I gave them twenty ears for supper so they would need none for breakfast. Mother thought I had a wrong idea of the matter, and so I think of Mr. Miller. [To make your illustration entirely parallel, should you not compare the feeding of bees in the fall to the putting of corn in the corn-crib? The bees do not eat all of that syrup in the fall; they put it in the combs and keep it for future use.—Ed.]

* * *

TOO MUCH FREE ADVERTISING.

I entered an agreement with a western fruit and farm journal to furnish an article for each month's issue. The first month I

wrote on "The Relation of Bees to the Fruit Industry." For the second issue I submitted some of my ideas on hives, frames, etc. My copy was returned with the following letter: "Purely from the advertising standpoint, don't you think the publicity given the Langstroth hive and the Hoffman frame is a little too great for a free notice? I do and would ask you not to mention the names, or else give me another article."

I felt faint when I received the letter, but recovered in time to write the editor that it would be impossible for me to furnish more copy if I could not be permitted the use of common terms. This man is doubtless a success as an editor; but when it comes to bee lore he does not know even common terms.

* * *

HONEY-CROP PROSPECTS.

My last report spoke of weather conditions not being favorable for honey-gathering at that date, April 5. Cloudy conditions prevailed more or less until April 10, since which time the weather has been ideal for gathering honey. The orange bloom is now about gone, with the yield far below expectations, due to the fact that the season for orange "beat the bees to it," but would not have been so bad had the weather continued warm instead of the many cloudy weeks we had. But "what is one man's gain to another man's loss?" With the cloudy days came rain which gave new life to all vegetation, and undoubtedly extended the blooming period of the button sage. At the time the button-sage bloom was being held in check by the cool weather, there were millions of bees hatching to add to the gathering force as soon as the weather cleared. Those depending on the orange alone "lost out" with the weather; but where sage was the main source a benefit has been the result.

The button sage is yielding heavily, and colonies that are ready for the harvest are doing a land-office business. I believe we shall get at least four more weeks of flow from it, which will add greatly to our output. Then if the white sage should yield well, which now seems probable, it should add two or three more weeks to our heavy flow. Oh for the bees! but an enormous crop of sage honey will be impossible this season for lack of bees in condition to gather it. Some apiaries will harvest a large crop, while others a few miles distant will return but little.

CONVERSATIONS WITH DOOLITTLE

At Borodino, New York.

PREVENTING SWARMING BY REMOVING BROOD.

"I wish to prevent swarming by the removal of brood, as an old beekeeper tells me this is the best way. But I read somewhere that in removing brood only the sealed should be taken, as swarming was caused by any colony not having enough unsealed brood for the nurse bees to care for. In other words, when the unsealed brood in any colony is not sufficient to consume all the chyle prepared by the nurse bees, swarming is sure to be the result. Is this right?"

It is possible that there may be something in this theory. If I am right, those basing their claim on this lack in consumption of the chyle prepared believe that the distension of the chyle-stomach is what causes uneasiness in the nurse bees, and that this uneasiness is conveyed to the whole colony—so much so that the majority of the bees with the mother sally forth for a new home.

But I have never been able to see the logic in any such reasoning; for with the issuing of any swarm, and the finding of a home (when not interfered with by man), these nurse bees do not have even a few larvæ to which to feed their loads of prepared chyle. Without the apiarist to provide a home for any swarm, often days and sometimes weeks elapse before any home is found at all. The scouts will search for an old vacated hive, a hollow tree, or a cleft in some rocks; and if none is found, the swarm will move on some few or many miles, when the cluster will be formed again. Scouts are sent out again, and so on till a place for a home is found; and when such is found, comb must be built and supplied with eggs by the queen, and three days elapse before these eggs hatch into larvæ. So it has always seemed to me that, if this accumulation of chyle theory had any foundation in fact, the bees were fools almost beyond measure, and their instinct not equal to an emergency.

"Again, I have read that the main cause of the bees swarming was a lack of cells in which eggs could be deposited by the queen; and in removing brood the unsealed brood should be taken, in which case the queen could find proper employment for her powers, not only in the cells of the combs given to replace those taken with unsealed brood, but in the cells vacated by the emerging brood. Is this right?"

Now candidly, do you think it right to try to tangle any one who has never ad-

vanced either of these theories in this way?

I am well aware, that, with a hive large enough to contain all the empty cells which any queen can occupy with her eggs during the whole season, little if any swarming will be the rule. Our beloved Moses Quinby told us, more than half a century ago, that with a box filled with comb large enough to provide cells for holding all the brood, honey, and pollen that all the bees produced by any queen could care for and bring in, such a colony would never swarm, and no one has proved Quinby incorrect. But such a box is not calculated for the wants of any beekeeper who wishes to produce gilt-edge honey to put upon the market, so is not to be considered by the one who is working for honey in the most marketable shape. I have tried taking away from two to four combs of brood from colonies that had gotten strong enough in numbers to swarm two weeks or less before the harvest of white honey commenced; and after comparing results in taking away both unsealed and emerging brood, I could see no difference in favor of either. If practiced in just the right time before the harvest, and before the bees begin preparations for swarming, fairly good results may be obtained.

"When removing brood to prevent swarming, where should the two to four empty combs (to replace the combs of brood removed) be placed in the brood-chamber so the queen will be most likely to occupy them, instead of their being filled with honey?"

I have tried putting all of them together in the center of the hive, placing any combs of honey the colony might have at each side next the hive, then the remaining combs of brood between these combs of honey and the empty combs set in; and where the bees are not storing much more than is used daily, this seems to put big-business ideas in the queen, and brings us as good results as are obtainable in using this removal-of-brood plan. Then I have tried alternating these empty combs with the combs of brood left with the colony, where nectar was coming in sufficiently so that the colony was at work in the supers of sections, and found that this brought forth better results than did the massing of the empty combs together. But I must record many failures with this plan of removing combs of brood to prevent swarming—not only in its failing to prevent, but in its being successful in putting much honey in the sections,

GENERAL CORRESPONDENCE

BEES ENTERING COMB-HONEY SUPERS

The Great Advantage of Drawn Combs Over Full Sheets of Foundation

BY R. F. HOLTERMANN

On page 903, December 15, 1913, Mr. McMurray refers to the natural like or dislike of bees to working in section-honey supers on account of their subdivided and crowded condition. I have not had the experience he describes, that bees, when given passages of communication, will close them up with wax or propolis. It may be due to locality; but I have found that bees gnaw comb foundation and stop openings when the supers are put on before a surplus-honey flow or after the sections and hive are crowded. They may also do it possibly between periods of flow when there is quite a length of time with no nectar coming in. Then, again, when a swarm issues, the bees are ready with a lot of wax scales—material which they can use for comb-building in their new home. If the swarm returns, owing to modern methods of manipulation, that wax may have to be deposited somewhere about the hive. In corroboration of this statement I might say that I have been able to detect the colony that swarmed in my absence by observing the wax deposited by the bees on the front of the hive. They were simply in a condition where they had secreted and were secreting wax scales for the comb they expected to build after first alighting to see that the queen was with them, and then, when next clustering, building comb. This second alighting proved to be on the hive, owing to my having previously clipped the queen's wings, and a portion of the wax was deposited by the bees on the front of the hive, and more would be taken care of in the hive.

THE ADVANTAGE OF DRAWN COMBS.

Bees do not care to go into supers containing only comb foundation. This is true whether the foundation is the size of a Langstroth frame, or of the ordinary section.

I do not hesitate to say that if the extracted-honey producer has no drawn surplus combs he will have much more trouble with the swarming impulse; and the surplus-honey crop, particularly if measured by the amount in the supers, will be materially reduced. Drawn comb invites the bees into the supers in a way that

foundation entirely fails to do. The critical time in the prevention of swarming is when the brood-chamber is near the point of being crowded; and unless the bees' energies can be successfully diverted to the acceptance of the super as a part of the hive, they are likely to swarm. The difference between drawn comb and foundation in the majority of instances is just enough to turn the scale in favor of swarming.

When the bees have to draw out foundation, they store honey in the brood-chamber which would otherwise have been put in the super, thus depriving the queen of room to lay, with the result already mentioned. At the same time, the worker force is decreased if the flow is prolonged, so that there is a corresponding decrease in the surplus-honey crop.

After a careful observation of colonies to which foundation was given in the supers, side by side with colonies having drawn comb, I would estimate that, if the former would give 75 lbs. of honey in the supers, the latter would as easily give 100 lbs.

The first year that I began beekeeping afresh, and started with the twelve-frame Langstroth hive, it was a bad (perhaps I should say a good) year for swarming. Some of my help, perhaps myself as well, were not very skillful at detecting queen-cells in recesses of comb. I had no drawn comb, and I remember that on one Sunday fifteen swarms issued and clustered together, and this is an apiary that we were trying to run on the non-swarming plan.

One going into the production of extracted honey could well afford to pay 30 or even 35 cts. each, or perhaps more, for enough perfect combs to supply half of each extracting-super with such comb. I do not like to put more than two or three sheets of foundation into a twelve-frame super at one time. I am aware that there is a difference in the way in which individual colonies will take such treatment. The honey-flow also makes a difference. I almost believe that, if the hive is on a loose bottom-board, the new super, if it contains only comb foundation, should be put for twenty-four or forty-eight hours *under* the brood-chamber with a queen-excluder between. Localities may vary much in this respect; but

during thirty years or more I have kept bees in quite a variety of localities, have had varied season and honey-flows, four or five varieties of bees and their crosses, and this is the conclusion that I feel justified in coming to.

In conclusion let me say that I am not ignorant of the method of putting some of the brood into the super. This undoubtedly helps in a measure, but only in a measure, and also has its disadvantages.

Brantford, Ont., Canada.

[We wish to indorse, as emphatically as we can, Mr. Holtermann's argument in favor of drawn combs in preference to full sheets of foundation. While the beekeeping fraternity at large will acknowledge of course that the former are superior, they have not yet begun to appreciate how much *more* superior they are. Last summer some colonies refused to enter extracting-supers with foundation, but they would enter supers with drawn combs without the least hesitation.

Another thing Mr. Holtermann brings out that will bear emphasizing is the value of drawn combs for preventing swarming. If we could, we would shout this on the housetop of every extracted-honey producer, because it will prevent the loss of a good many swarms, and the loss of a good deal of nectar that might otherwise be secured.

So important do we regard drawn combs that we sent down to our Florida apiary

last winter 6000 frames of foundation; and one of the "problems" that our Mr. Marchant has had to tackle is to force the bees to draw these out and make increase at the same time. If he had had drawn combs he would have had 25 to 50 per cent more increase.

Many and many a time we see beekeepers who are careless about storing their combs. The worms get into them, and in other cases hundreds and thousands of them are stacked up in all kinds of heaps on the honey-house floor, where they get bruised and broken, and sometimes we find them in the back yard where the sun melts them down. The owners say they will pick them up "some other time;" but they don't. The facts are, these drawn combs, next to the bees themselves, are the best capital the extracted-honey producer can have. If a full sheet of wired foundation is worth, say, 16 cents, a frame of drawn comb ought to be worth 35. In a good year they might be worth even 50 cents.

The problem with many beekeepers should be to get their frames of foundation drawn out *before* the honey season. This can be done by placing a full sheet between two frames of brood, when the spreading of brood can be practiced with safety. If possible, get the combs drawn out in the fall, during buckwheat or soon after; and when once drawn, stack them up carefully in the honey-house, where they can be fumigated, ready for next season's use.—Ed.]

SHALL APICULTURAL EDUCATION BE ENCOURAGED?

BY OREL L. HERSHISER

Beekeepers may be divided into two general classes, more or less sharply defined, one believing in offering the best of apicultural advantages and encouragement to any and all who may wish to learn the science; the other, including all who do not believe in so broadly offering such advantages and encouragement.

In the former class may be included the educators engaged in apicultural instruction in schools and colleges; bee-inspectors and government apiarists; authors of books on apiculture; editors and publishers of apicultural periodicals, and most of the writers, correspondents, and contributors to them; and most of the members of beekeepers' associations, especially those who read papers and make addresses, and otherwise give instruction.

Inasmuch as nearly all apiarists who produce honey to sell avail themselves of every opportunity to hear if not to engage

in the instruction and proceedings of beekeepers' conventions, it would seem that nearly or quite all the entire membership of the craft would be included in the former class. However, paradoxical as it may seem, it is well known that some apiarists who are leaders in convention proceedings, and otherwise prominently engaged in apicultural educational work, are also opposed to offering educational encouragement to students desiring to qualify themselves as beekeepers. It appears that the two classes of beekeepers overlap each other, some individuals being not only on the fence but on both sides of it at the same time.

Opponents of the scheme of education and encouragement evidently fear that any considerable accession to the ranks of beekeepers will result in an overproduction of honey and consequent decline in prices to a point where beekeeping will cease to be a remunerative occupation. It should be re-

membered that only those having the natural adaptability for apiculture will ever be extensively engaged in it; and what would be more natural than that the education of all apiarists to a better knowledge of the business would be mutually beneficial? If all beekeepers were taught how to obtain honey as good as the bees can make, the average quality would be better, more dependable, and more desirable than that which is produced in ignorance of best methods. Beekeepers well schooled in their occupation know more of markets, and are better advertisers and salesmen than those of lesser knowledge. Unschoolled, untutored, and ignorant owners of bees are the real menace; and it is this class of beekeepers who harbor infectious bee diseases, and are instrumental in spreading them, and who demoralize markets.

Not a large percentage of those educated at agricultural colleges engage in agricultural pursuits as a life occupation. The same is true, to a greater or less extent, of other lines of technical training. After acquiring his education for a certain purpose the individual finds he lacks the adaptability, or, for one reason or another, abandons his first choice of a calling and engages in some other lifework. It may be reasonably inferred that only a small percentage of those who make a scientific study of apiculture, either at college or elsewhere, will ever become honey-producers in the true commercial sense. There is really no danger of too many well-qualified beekeepers.

Phenomenal crops of honey are likely to occur at long intervals; but overproduction in the average season is not likely ever to occur. Beekeeping has been carried on in some state of advancement ever since the dawn of history; but extensive commercial apiaries seem to be one of the developments of the last century. In our own time we have noticed localities where from one to a few hives of bees could be seen near many farmhouses, change to the extent that one could travel for a day or two without seeing evidences of bees kept by farmers. Yet in some such localities, many times, more bees are kept, honey produced, and profit realized than when there were so many individuals who had only a few bees. The natural protection of forests and fences disappeared; brood diseases came in; the bees, without a real master, perished, and in their place an apiarist establishes an apiary, and, with a thorough knowledge of the business, operates it as a profitable business proposition.

Beekeepers who operated out-apiaries thirty years ago were few and far between. Scarcely more than half a dozen in the

United States, and one or two in Canada, are all within my recollection, and most of these with an operator in each apiary during the swarming season. Of late years, however, while the numerous small bunches of colonies owned by farmers are gradually disappearing, we have not only many more apiarists who run out-apiaries and make apiculture an occupation, but also many more operating bees as a side line on a smaller scale in a commercial way, as may be judged by the attendance and enthusiasm at beekeepers' conventions.

During recent times the amount of honey produced annually has greatly increased, and the consumption has kept pace with the production. Honey, having a high food value and an agreeable flavor, should command a higher price, and we think prices have not risen in proportion to the comparative values of some other leading food products; yet it must be admitted that honey sells for far better prices than when there was less produced. This tends to prove that a greater number of expert apiarists, and steadily increasing production, have not, thus far, operated to the detriment of apiculture as an occupation.

When we consider that the beekeepers of many of the States and some of the provinces have long since maintained State and provincial beekeepers' associations, including many local, branch, and affiliated societies, some of them receiving governmental financial support; that several colleges have for many years been offering apicultural instruction; that several States and provinces make liberal appropriations for the maintenance of numerous bee-inspectors, a part of whose duties is to instruct in the proper care of bees; that the United States Government, some State governments, and the Ontario Government, each maintains a department from which helpful pamphlets and bulletins on apicultural subjects are issued free, and that the science of apiculture is enriched by numerous books and periodicals of high class, we can not avoid the logical conclusion that the unanimity of these several educational agencies indicates beneficial results that amply justify a continuance of the educational scheme.

As the result of a bumper crop of wheat, corn, hay, etc., was there ever an advocacy of cessation of education and encouragement to engage in agriculture? No; but, on the contrary, the slogan is, "Back to the farm," or "Keep the boys and girls on the farm," as the means of keeping the State and nation truly prosperous. As the result of a ruinous bumper crop of fruit, has dissuasion from embarking in horticulture been advocated? No; but the States and

provinces are deeply interested in the planting of new fruit areas, and "top working" the worn-out orchards to make them productive; for time has proven that bumper crops are exceptional. How much less, then, should we fear ill effects from a bumper crop of honey which time has proven may be expected at very widely separated periods, and especially as extracted honey is not perishable, but is as good several years hence as at present, if properly handled!

Governments establish departments of agriculture, including the various branches of rural husbandry, for the purpose of bettering the conditions of the rural population in every way, and of increasing the wealth of the State or nation. Governments realize that the prosperity of the people, especially those engaged in rural husbandry, is the prosperity of the Government. As an aid to this end, agricultural colleges are established and maintained. It can hardly be possible that apiculture should be an exception, and fail to respond advantageously to governmental encouragement.

Conservation of natural resources—of water for irrigation and power; of forests and re-forestation, or reclamation, etc., has engaged the attention of many eminent scientists of late years. In fact, no line of research could be of greater benefit in maintaining and increasing the wealth of a state or nation than to conserve and increase the materials naturally within its boundaries that add to the welfare and happiness of its people. Honey is a natural resource. If not gathered by bees it is lost. To conserve it, bees and beekeepers are indispensable. Perhaps much more than is gathered goes to waste. Is it not true that the state would add to its wealth in proportion to the additional amount of honey saved from waste?

And whatever inures to the benefit of the state benefits the people in the same ratio.

Let us, then, continue to offer encouragement and instruction to any and all who believe they can aid in the conservation of the ungathered nectar, to the end that the myriads of flowers of the fields may not bloom and secrete their sweetness in vain.

Kenmore, N. Y.

[We believe Mr. Hershiser is correct in what he says, all through. Education along apicultural lines will do more good to eliminate foul brood than any thing else. The beekeeper who makes the real trouble and annoyance is not the one who has had apicultural training at some school, but, rather, the man who has not read up, does not take any bee-paper, and never goes to conventions. The more we can have of apicultural schools, and foul-brood inspectors who can give apicultural instruction along general lines, the better. There is plenty of unoccupied bee territory in the country for all, and the apicultural student has it pounded into him, as we happen to know, that he can not make any money keeping bees if he locates his yard within half a mile of another beeowner. No, he is not the man to crowd territory or to overstock it. The few who stick to the business will go into territory where they can have all the nectar for the simple reason there is no one else to get it.

Those who are casting reflections on the possible value of our apicultural schools will do well to read Mr. Hershiser's article carefully. Frankly, is there any argument against apicultural schools but a narrow short-sighted selfishness that would eliminate all competition? Is it not true that they will stimulate a demand for honey? —Ed.]

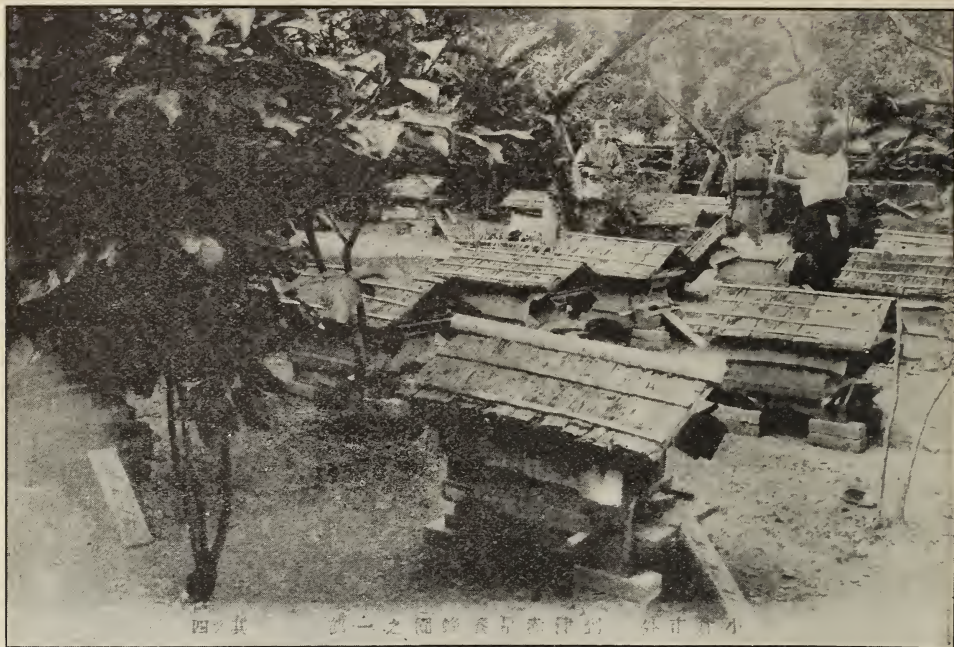
MORE DRASTIC MEASURES NEEDED FOR CURING FOUL BROOD

BY W. N. RANDOLPH

The only way to stamp foul brood out of our country effectually is to use more radical measures. Nearly all the schemes I have read about look to saving every thing—bees, hives, frames, and, worst of all, honey. I think that a man should not be permitted to sell honey from a diseased hive, nor even from a diseased yard; much less do I believe that he should be allowed to rear queens in a yard infected with foul brood and send them out all over the country. Boiling the honey to mix in the Good candy sent with the queens does no good, because to those of us who have read the text-books on the law of evidence it is a badge of

fraud. It makes the honest and careful queen-breeder say in effect, "I may have foul brood in my yard," and the careless or dishonest one who knows, or ought to know, "Oh, well! I will warm up my honey a little, and let it go at that. Who is to know the difference?"

If every beekeeper in the country would resolve to use more drastic measures at once, it would help to solve the problem of foul brood. He should, on the first discovery of the disease (and all ought to be on guard now) destroy the bees after nightfall; and unless he has a steam-boiler and large tank he should destroy, by burning,



The Akahoshi apiary, Itozu, Kokura, Buzen, Japan.

all the fittings of the hive—frames, combs, and followers. As for the hives, bottom-boards, and covers, a thick coat of white lead and oil applied on every surface, inside and out, will bury beyond resurrection every foul-brood germ, and will add to the lasting quality of the hive; or burning over with the gasoline-torch will do. Painting, however, is more quickly and cheaply done.

Cleaning up and starting anew a large yard at this place, I both scorched and painted the hives and outfit (of course destroying all the combs and frames) and raked off and cleaned the yard and beehouse. For two seasons there has been no further sign of the disease. I have enlisted all of the out beekeepers in our fight. The initial cost of our plan was greater, may be; but we feel well repaid because we are done with that question.

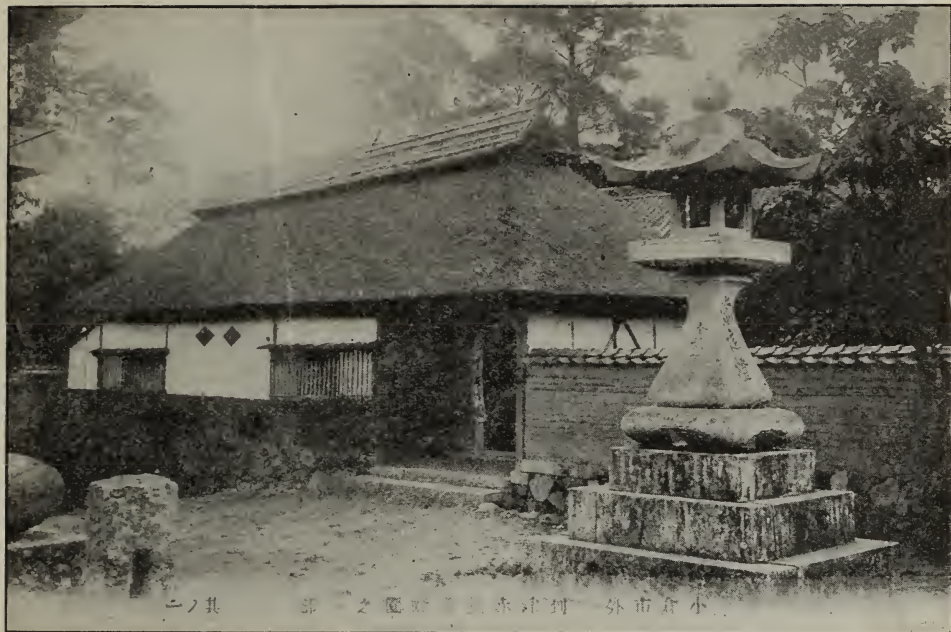
The owners of this yard—bright, enterprising young men—had built up a splendidly equipped apiary, with all the latest improvements, and had run it only three years, when they sent to a queen-breeder for a lot of queens with nuclei. These had foul brood, and, not knowing any thing about the disease, the first notice the owners had was that their yard was rotten with it. Now this thing ought to be stopped. It can be stopped if the bee journals get busy. No man ought to be permitted to send bees

or queens any distance, without a certificate from some competent authority, stating that the apiary is free from foul brood. We argue, theorize, and experiment too much, and the system has spread the malady nearly all over the country, when it should be a simple matter of destroying and quarantine. By being watchful the approach may be discovered, and one may have to destroy only a hive or two. More attention should be given to rearing of queens whose progeny are more nearly immune to the disease.

Letohatchie, Ala.

[Some beekeepers may take issue with our correspondent. The man who has no foul brood, and never expects to get it, will probably argue that the other chap who has the disease should not sell his honey. But the latter would probably take the other view, on the ground that the honey itself would be harmless for human consumption. The only danger from such honey is from empty cans thrown out back of the grocery or in the back yard of the consumer, and herein lies a big danger.

Boiling honey to make Good candy does a great deal of good. We know most of the queen-breeders of the country personally, and we are satisfied that they are doing business on the golden-rule feature to the letter. However, there is a better way yet. The



The gate entrance to Akahoshi apiary, Itozu, Kokura, Buzen, Japan.

Miller smoke method of introduction will ultimately supplant the cage method everywhere. If so, this will eliminate all possible danger from the candy, providing the queen-cages are burned.

We quite agree with our correspondent that we cannot be too careful; but we think he errs in thinking that paint inside of the hives will be sufficient to disinfect it. Some paints will flake off, leaving the wood clear,

just as it was before painting. Better use a torch to scorch out the inside of the hive and other appurtenances.

Neither do we recommend burning hives, bees, and all unless the disease is confined to one or two colonies. If it once gets started in an apiary, wholesale burning is too expensive, and quite unnecessary, as practically all foul-brood inspectors have agreed. —Ed.]

A JAPANESE APIARY

BY K. NOMMA

Assuming that you may be interested in learning how bee culture is enlarging even as far as the Orient, I take great pleasure in sending you three Japanese post cards. They represent a small apiary situated in the suburbs of Kokura, Japan, which is owned and managed by my sister and her husband. Despite the fact that it is still in

a primitive state, and established only three years ago, they are showing the most favorable signs of prosperity.

Inasmuch as each succeeding year is bringing more net profit, my sister and her husband have just completed a plan to start a new apiary in another part of the country.

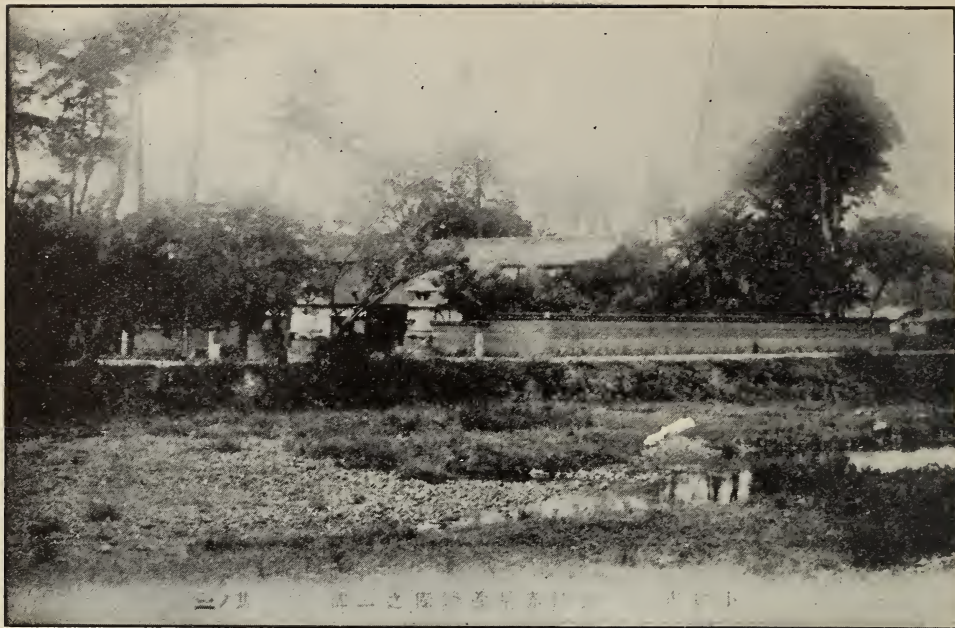
Port Henry, N. Y., Dec. 17.

THE TIME REQUIRED FOR BEES TO MATURE FROM THE EGG

BY T. J. LANDRUM

I am much interested in Dr. Miller's Straw, page 125, Feb. 15, in regard to bees hatching out in less than 20 days. I am quite sure Dr. M. has made some mistake

in his test. I have tested this thing time and again in recent years, and I have always found a few cells of *unhatched* brood after 21 days—that is, the bees didn't all



A distant view of the Akahoshi apiary in Japan.

hatch in 21 days, but a few would still be unhatched on the 22d day from the time the queen was taken away.

I had occasion to test this in transferring bees from box hives. When breaking up the box after 21 days, or on the 22d day. I have always found some unhatched bees (brood). Dr. Miller does not say that he looked at this frame ("XIX") once between August 5 and August 25.

Now, Mr. Editor, I know by experience that eggs don't always get a chance to hatch. When taken from home, and put into a strange colony, the bees sometimes take offense at this strange batch of eggs and destroy every one of them. I wish Dr. Miller would please tell us if he looked at this particular "XIX" frame at any time between August 5 and 25, and if he is sure the eggs in this frame ever reached the larval state. I am frank to say that I don't believe bees will hatch in 19 days 18 hours and 50 minutes from the time the egg is laid; and I believe if Dr. Miller had taken a peep at that frame any time between Aug. 8 and Aug. 25 he would have found every cell in said frame empty.

I expect to test this matter thoroughly this coming season, and will let you know what I find.

Atwood, Col.

Dr. Miller replies:

It's a good thing there are sharp eyes

upon us, for there are many chances for slips in conducting any experiments with bees. I know that bees will sometimes destroy every egg in the hive, but that did not occur to me when I reported the case in that *Straw*, p. 125. All that I reported was that the last egg was laid just before 5:05 P.M., Aug. 5, and that the cells were empty 11:55 A.M., Aug. 25. With no more data than that, there is the possibility of destruction of the eggs, and I am thankful to friend Landrum for taking up the matter.

At the start, there was no thought of learning any thing about worker-brood. It was an experiment relating to queen-rearing. I will now give the case more in detail. The comb was taken from No. 28 at 5:15 P.M., Aug. 5 (the only comb in the hive), and put into No. 91, a strong queenless nucleus kept as a sort of storehouse.

Aug. 8, it was put into No. 69, a strong queenless colony, with the express purpose of having queen-cells built. I made no minute of whether eggs were present at this time or not, and have no recollection about it, but I think it doubtful that I should have put into a hive a comb for cell-building without noticing that the eggs had been removed. Still it is possible.

The record shows that Aug. 12, at 3 P. M., no queen-cells were yet sealed. I can hardly imagine the possibility of my examining the queen-cells at this time without noticing that the worker-cells were empty, if such

had been the case, since it was a week since the eggs were laid. Still, it is not utterly impossible.

Aug. 19 I cut out the cells, and have a distinct recollection of seeing the worker-brood in compact form; and when I had cut the cells I put the comb into the upper story of No. 1 for the express purpose of allowing the worker-brood to hatch out.

It was put into that upper story with no thought of noting the time of hatching; but some time after Aug. 19 it occurred to me that there was a good chance to learn just how long it was from the laying of the egg to the emergence of the young worker. Aug. 25 I thought I would begin periodic examinations, so as to be able to say *between* what two hours the brood had emerged, and I supposed I was looking while it was yet certain that no young workers could have emerged. Finding every cell vacant was one of the surprises of my life.

Now, here are the things that I *know*. I know that no eggs were in that comb Aug. 5, 3:05 P. M., and that the eggs in it were laid between 3:05 P. M. and 5:05 P. M. It is practically certain that the queen would continue to lay in that comb, since it was the only comb in the hive, until its removal at 5:05 P. M. It is positively certain that all eggs were laid in it after 3:05 P. M. I

know that sealed worker-brood in apparently good condition was present Aug. 19. I know that not a cell of brood was present at 11:55 A. M., Aug. 25.

So I know that the time from the laying of the egg till the emergence of the perfect insect could not have been longer than from 3:05 P. M., Aug. 5, to 11:55 A. M., Aug. 25 (less than 20 days), *unless* the bees destroyed the brood some time after Aug. 19. Bees when in a starving condition do tear out brood, sucking out the juices and throwing away the skins; but did you ever hear of their tearing out normal worker-brood 14 days after the laying of the egg?

Besides, this could not possibly be a case of starvation. It was in the midst of the heaviest flow I ever knew. There were four stories of extracting-combs, and not a drop of honey had been taken away from the time the flow began. Is it possible that the bees tore out a single cell of that brood after Aug. 19?

I now submit the case to the jury, asking the foreman, T. J. Landrum, to consider whether there is a reasonable doubt that the time of development in this case was within 19 days 18 hours 50 minutes, and whether there is a *possibility* that a single cell took more than 19 days 20 hours 50 minutes.

Marengo, Ill.

C. C. MILLER.

THE CONTROL OF SWARMING AT OUT-APIARIES RUN FOR EXTRACTED HONEY

BY J. L. BYER

As stated in the Feb. 15th issue, many have written me asking questions about different phases of out-apiary work. In that issue I talked of early-spring management, leaving off operations at the opening of fruit-bloom. At this time I shall tell some of the plans I use to control swarming at out-apiaries; and right here let me ask you to notice that I use the word "control" instead of prevention; for, notwithstanding the bulk of those who have written me ask for means of *prevention* of swarming, I frankly confess that I have yet to learn a satisfactory plan that will work in all kinds of seasons, with all kinds of hives, and with all kinds of bees. As many are already aware, I have bought nearly all the bees we have in our different apiaries; and while I regret it, yet the fact is we have a number of different kinds of hives in use. In one apiary there are over 100 eight-frame L hives; in another the hives are all ten-frame Jumbo, while in another there are over 200 colonies on frames similar to the Jones, only somewhat shallower.

In so far as the eight-frame Langstroth apiary is concerned, it is needless to say that this is the one that gives us the most trouble in the matter of controlling swarming; and when one has a lot of bees in a hive of that dimension, certainly drastic measures have to be taken to prevent wholesale swarming, if the colonies are all strong at the opening of the clover flow and if the yield of nectar is good and lasts any time at all. To make the matter short, we have found that the only thing to do in such cases is to take away the major part of the brood *before* the swarming fever shows, substituting full sheets of foundation in place of combs removed. If the colony is strong I recommend taking all but one comb of brood away; and if there are no signs of swarming at the time of operation, these brood-combs can be placed above the excluder in the super. If the flow is on, as it should be when doing work of this kind, I place a super of comb next to the excluder, and then another story with the brood in on top of that. With this brood so far

away from the old brood-nest, queen-cells will be started in the majority of cases; but they can be cared for easily later on. I have had queens hatch in this upper story, and yet there would be no swarming; but some have reported otherwise, so it does no harm to look through these combs eight or ten days afterward.

One great objection to this plan is that, if there is any honey of inferior quality in these brood-combs, it will spoil the quality of No. 1 clover honey when the extracting is done. This is a question that every beekeeper will have to decide for himself, as locality and management of colonies previous to doing this work have a great deal to do in determining results.

The advantages of the plan are that it nearly always prevents swarming for the season; you keep all the bees in the one hive, and at the same time get a lot of new combs drawn out each year. More than any thing else, it means a crop of honey if there is any to be had, as no other plan that I have any knowledge of will give a greater surplus. This plan is old, and was first given by a southern beekeeper whose name I can not recall.

With four or five apiaries with the large Jumbo hives, many might think we should have no swarming when running for extracted honey; but unless due precautions are taken, these same hives will give us lots of trouble as past experience has shown conclusively. One of the main points to be considered in heading off the swarming desire is to give lots of room early enough in the season so that the bees will have supers to enter just as soon as they are at all crowded in the brood-nest. Our greatest trouble with swarming during the past five years has not been with the very strong colonies, but, rather, with those not strong enough to super at fruit-bloom. They are left till the opening of clover, and perhaps by that time they are a bit crowded, and, instead of going into supers when given at that time, they make preparations for swarming. When I find colonies in that condition I generally raise one or two frames of brood into the super, over a queen-excluder. Now and then we may get caught with a bit of chilled brood if the weather turns cool suddenly; but, all things considered, I would sooner take a little risk that way, and be sure that the colony is not going to get the swarming fever so early in the season, and probably knock out all chances of a crop of honey, particularly if the season is very short.

Colonies that have entered the supers during fruit-bloom rarely give any trouble at the opening of clover, so the idea should

be to get all in that condition as soon as possible. Sometimes we get caught in fruit-bloom, and find extra-strong colonies preparing to swarm at the time we are clipping queens. There are many plans of dealing with such colonies at this date; and if brood has to be taken away to stop the notion of swarming, one can always at that time find many places to put it. I certainly break up the swarming fever at that time in *some* way, as one has no time to be tinkering with a few colonies at that busy season.

Last spring I moved two carloads of bees; and during my absence the clover started to yield. One apiary was unusually strong with bees for so early in the season. and, before leaving home, I had clipped the queens during fruit-bloom, and given a full-depth Jumbo super. When I came home and got to this yard I found three-fourths of the colonies with the super full of fruit-bloom and early clover honey, and about all with queen-cells started. The bees were nearly all of Carniolan blood, and I realized that my absence had put things in pretty bad shape at that place. I hastily decided on a plan; and whether it was on account of certain conditions of honey-flow, or from other causes, I knocked out about all the swarming for the time being, and in the end got a very large crop of honey. I hunted out all the queens, and caged each in a wire-cloth cage about $\frac{3}{4}$ inch in diameter and 6 inches long. The cage was placed between the brood-combs beneath the excluder, two combs being spread apart to allow the cage to go between. Each comb was taken out and examined thoroughly for cells, the bees being shaken in front of the hive to make sure that no cells were missed. Abundance of room was given above, and they were left alone for eight days, when the same process was gone over and all cells cut out again. The old queen was liberated, and, much to my surprise, the swarming fever was done for, in spite of the fact that the bees were Carniolans. I always think that bees having a caged queen never work so well as those in normal condition; but in this instance, for some reason, it seemed to make little difference. The flow was very heavy, and that may explain the matter. Of course, this plan meant a lot of work; but it was a desperate case; and if I had not been away on this moving trip, supers would have been given and the trouble avoided.

After colonies are all storing in supers. if abundance of storage room is given there should be no swarming, particularly if the bees are Italians and the hives at least as large as the ten-frame L. In my own case I prefer the ten-frame Jumbo, believing that



High trees that swarms did not alight on, and why.

better results can be obtained with less work than with a smaller hive, in so far as extracted honey is concerned. During the season, if you suspect swarming in any colonies the only way to be *sure* of the matter is to pull off the supers and examine the brood-nests. Of course, when there are two or three full-depth supers on each colony, this work is easier described than done. However, I find that many are like myself on this question; for during the height of the season, when one is jumping around about 16 hours of the day, such a thing as

going through a whole apiary looking for queen-cells is out of the question. One soon gets to know from external conditions, by the progress being made in supers, and in various other ways, how to diagnose pretty well without tearing into the center of the brood-nest at every visit. We lose very few swarms each season—possibly not more than two or three at each yard; and this, if nothing else, leads me to be more than ever in favor of using large hives for out-apiary work.

Mount Joy, Ont., Can.

HIVES SO LOCATED THAT THE SWARMS ALMOST INVARIABLY SETTLE ON LOW SHRUBBERY

BY RUTH C. GIFFORD

In the spring of 1912 I moved my bees to a new location along the north side of the front yard, and directly south of the garden. Since then I have had the pleasure of seeing every swarm except one (which sailed to the limb of a fine tree) settle on the blackberry-vines in the garden. In the summer of 1912 I watched my bees closely, and found that, with the exception of the swarm above mentioned, they all settled on the berry-vines. This summer I again watched them closely. The result was the same, for they again settled on the berry-vines.

The position of the bees in relation to shade and the distance from the blackberry-vines must be the cause of their settling on the vines. Before I moved them to this location I always had to climb trees for the

swarms, and several times even had to use a forty-foot extension ladder.

The lower half of one row of blackberry-vines is 66 feet from the backs of the hives. There are also some trees near by.

Unfortunately the pictures do not give a clear idea of the amount of shade, because they could not be taken until the last of October. Some of the hives stand in dense shade, but not all the time. After half-past eight there is a dense shade *in front* of them all day, and they don't get much sunlight between half-past eight and half-past ten; but after that they are shaded by the side branches of only one tree.

During the swarming season I went through the colonies carefully every ten days. I cut out queen-cells twice from colonies which had them, gave extra venti-

lation, and empty combs where necessary. When I found queen-cells the third time I noted it in the hive-records, closed those hives, and left them alone until they swarmed. I have found that, if colonies persist in trying to swarm, after the queen-cells have been cut out twice, and they have been given extra room, they do far better work if allowed to swarm in the natural way. However, I watched the above-mentioned colonies closely, and was rewarded by seeing a swarm come out of every one of them, and settle on the blackberry-vines. After I hived the swarms I followed the usual method of placing them on the old stands, and moving the parent colony to one side. Of course the weaker colonies were slower in building cells and attempting to swarm than the stronger ones.

I don't know whether the bees would settle on a row of small trees as readily as they do on the berry-vines or not. Their liking for the latter is at times almost uncanny.

One day this summer I saw three swarms come out about twenty minutes apart and quietly fly over and settle on the blackberry-vines. I usually find the swarms clustering around the post and clinging to all the canes. This gives them more "standing room" than the limb of a tree, and does not compel so many bees to cling to a few. I also notice they usually cluster in such a way that the vines shield them from the direct rays of the sun.

I expect to examine each colony twice next summer for queen-cells. Both times I will give empty combs where they are needed. Then I am going to keep them

supplied with plenty of super room and leave them alone. The colonies that are determined to swarm will swarm anyhow, or else sulk; and I can hive a swarm from a blackberry-vine in less time as well as with more satisfactory results than I can manipulate a colony to prevent swarming.

North East, Md.

[In locating an apiary there are several considerations to be taken into account. First of all, the bees should be placed as far as possible from a line fence or a general highway. In either case, the streams of bees in going to and from the fields in the height of the season are liable to encounter teams of horses and men, and sometimes this causes trouble.

Another important consideration is shade—not too much of it, but just enough to screen the bees during the hottest part of the day. In the securing of that shade, as our correspondent points out, it is very desirable to place hives near low shrubbery to catch the swarms. If there is no such shrubbery, and tall trees are close at hand, there will be some unpleasant experiences in trying to get swarms down from high places; in fact, some of them will be entirely inaccessible, and will be lost. It is a fact that low shrubbery, if near the hives, will attract a large percentage of the swarms; and when a swarm has once alighted on a bush or limb, that bush or limb will probably, on account of the odor, attract other swarms. This we have proven out time and time again in the case of our grapevines, that catch practically 99 per cent of our swarms, the remaining one per cent going up on our tall evergreens.—Ed.]

THAT APRIL 1ST COVER PICTURE; LUCK IN BEEKEEPING

BY F. GREINER

I want to congratulate you on the fine cuts exhibited on the title page of the April 1st number. We have at different times in the past been searching for good representations of honeybees, but have always turned away in disgust from any thing that was offered us. In the line of a queen-bee we found there were seven abdominal rings in the best cut we could find. It would seem as if an artist (?) putting out work like that would hide his head. Representations of bees and drones found in our text-books are so faulty that it requires an expert to find features resembling the real thing. In view of all this it does me a lot of good to feast my eyes upon the title page of the April 1st number of GLEANINGS. It is true that there

is not present in these pictures that symmetry found in engravings and woodcuts of former efforts; but that only increases the interest in them, and enhances their value. The only defect seems to be in the drone, the abdomen being too short, as you have pointed out in your editorial; and I hope that in subsequent trials you will succeed in eliminating this defect by selecting a specimen with a fuller abdomen.

QUEEN NOT ALWAYS TO BLAME; SOME QUESTIONS RAISED.

The idea that the queen is not always to blame when the colony is not coming up to the mark is one I have entertained for a great many years. I had at one time quite



A tight board fence that is too much of a good thing; a section of a bee-tree in the foreground.

a little controversy with our lamented friend Hutchinson on this question, and he finally made the concession that there was quite a little in this worth ferreting out. Whatever we may think and say about luck in our enterprise, nevertheless there is such a thing as luck. There is not one among us who can control all and every condition that has an influence on the net result. Even if we were smart enough to bring each colony up to that point of greatest populousness just at a certain time, then we might fail in judging when that time would be the most appropriate and advantageous, for seasons are not always the same.

Who can be held responsible for the drifting of bees from one hive to another? Who is wise enough to start his bees in a certain direction, so that they will find certain honey-secreting blossoms? Many other questions suggest themselves here. We have had certain colonies do as good as nothing one season, and the next season they did wonders. Three little dwindled-out colonies were united early in June, and outdid any thing else in the yard that season. We are a long way from having solved all the problems in beedom.

Naples, N. Y.

A DOSE OF BEE FEVER; SOME DISCOURAGING EXPERIENCES, BUT STILL HOPEFUL

BY W. H. DREYER

I send you a photo of a section of an elm-tree containing a swarm of bees hauled to my home June 3d. It was cut on the W. S. Blakesley farm, about three miles west of here, and was some job before it was safely landed as you see it in the picture, with a Langstroth body over the top cavity, leaving the knot-hole for an entrance.

I have kept bees for about ten years, and have had enough ups and downs in the business to take the wind out of almost any one; but beekeeping has something about it that continues throwing fuel on the fire, even if it consumes some of our time and capital.

When I started beekeeping I bought my

first ten colonies in box hives of the man on whose farm this bee-tree was cut.

My first loss was almost entirely from robbing. I wanted to taste some of their honey, and make a bad spill of it, getting all my bees excited, and inviting many others.

But this was only an incentive toward getting hold of bee-books and journals. After reading the many possibilities on the subject my enthusiasm grew instead of dying. Langstroth hives were bought, then came 4x5 sections and fences, and all the up-to-date things that go to make beekeeping a pleasure. After laying in a good supply of these things, enough to manage

50 stands for comb honey, along came those bad clover years, idle supplies, hard winters, moth-eaten combs, and the like; but to top matters off, I was completely cleaned out in the winter of 1911. There I was, beeless, but not hiveless (I had the hives right).

In the photo you will notice that \$75.00 fence for protection. The winds got over it somehow all the same; and those chaff hives, about 40 in all, were of no avail—certainly trying.

The fall of 1912 I again bought 25 colonies; and after tucking them away in their winter quarters as carefully as I knew how I was again ready for a new start.

How did I spend the winter of 1912 while those bees were sleeping? Let me assure you I did some tall thinking and also some reading that often carried me into the *wee* hours of the night.

I already had requeened my bees with young queens, for that is a settled matter with me—the first step toward success, all things considered.

The next matter I settled on was single-walled hives to be set in winter cases for protection in winter. My bees never breed up fast in chaff hives, but always show up well in single-walled.

No Alexander feeder could be attached to them as to the single-walled, and many other manipulations are all out of the question with double-walled hives; and, before I forget it, let me state that the bees tucked away in winter cases with five inches of packing all around were as dry as a chip when I peeped into them April 1.

AFTER REMOVING THE CASES.

About this time in spring I equalize stores, tack over each hive a sheet of heavy building-paper, which holds every bit of

heat in the hives. An Alexander feeder is placed underneath, and left alone until about May 1. Then I equalize brood, to be repeated about May 18 or 20.

Last spring my bees were in splendid condition managed on this system.

In closing allow me to say that the outlook last spring was great. Anywhere one looked the ground was white with clover; but I did not see a single bee on the blossoms. Basswood was not touched by bees so far as I know; and had it not been for sweet clover I should not have a pound of honey. This yielded about 900 lbs. on 18 colonies. I have increased my yard to 60 colonies, and hope to have an outyard next year if things are promising.

Findlay, Ohio.

[The winter when you lost so heavily was severe all over the United States. Even if your bees had been in winter cases your loss probably would have been about the same. Outdoor bees suffered everywhere, no matter where they were kept.]

One lesson we learned during that eventful winter was that a tight board fence is not as good a windbreak as trees or shrubbery. The objection to a solid fence is that the wind strikes it, glances upward, then dives downward, hitting some of the hives; it starts counter-currents and whirling eddies. A picket fence is better; and better still would be two or three picket fences, one in front of the other; and about four or five yards apart; but as this would be expensive, shrubbery answers as an excellent substitute. A screen consisting of farm buildings, barns, houses, etc., if high enough so the winds will skip clear over the hives, are excellent. Behind such a screen, bees in single-walled hives will often winter nicely.—Ed.]

BEEKEEPING IN THE RED HILLS

BY J. J. WILDER

Seemingly, if there is any section in our great country where beekeeping would be a failure or a total impossibility it is in the great Red Hill belt; but no; it is profitable there, and is progressing; yet the amount of honey-plants there is very small and widely scattered. Such is the case in middle Georgia, where some of our most progressive beekeepers are located, such as Mr. J. R. Durden and W. L. Wilder, of Macon, Ga., and John W. Cash, Bogart, Ga.; the latter operating over 20 apiaries.

The forest in this great belt consists

mostly of second-growth pines. The land, lying very rolling, was worn out and broken up in gullies many years ago, and this growth of pines came up on it; but along these larger gullies and branches and creeks are a good many scrubby poplar-trees, some sourwoods and wild plum scattered here and there; and along larger streams are some tupelo gum; but there is not much of this. On the terraces and around the patches that are in cultivation, and the old fields that are lying out, there are considerable goldenrods and asters growing which yield



Apiary of J. R. Durden, Macon, Ga., and his scheme of roofing-paper to take the place of shade-boards.

some nectar in the fall. Also, in some localities the cotton-plant yields some honey, all of which go to make up a little.

As a rule the beekeepers do not keep many colonies in an apiary or one location, and scatter them out well over the country. These beekeepers are doing just as well as those who are seemingly in far better sections or where the honey-plants seem to be abundant. The point is this: After all, there is not much difference in our country, up one side and down the other, when it comes to our industry and the possibilities of it; and the more I know of beekeeping from experience and observation, and through correspondence, the more I am convinced of this fact; and if all beekeepers could realize this there would be many more contented ones in our ranks, and there would not be so many disappointments caused by pulling up and moving here and yonder in search of better locations, and resulting in failure, etc. As a rule we are a nervous, restless set, always on the alert for the good spot which is always just ahead. This ought not to be, for we ought to settle down and be contented so far as the better section is concerned, and spread our bee business out over the country around us, and progress and be happy; for there is but very little difference and not enough to pull up and go after.

AN APIARY AND ITS OWNER.

The photo here shown presents to our vision an ideal apiary on the side of a red

hill owned by Mr. J. R. Durden, of Macon, Ga., whose form also appears. This apiary is located out in the open, surrounded by waste land that is lying out, which has a good growth of goldenrod and asters on it, and also some shrubbery. It will be seen that no artificial shade is used to be in the way of the apiarist, but a number of different kinds of covers are used which can be easily seen, and I believe almost every kind sent out with hives. He says the cheapest cover sent out, or a very cheaply constructed one, is the best if it is covered with a good grade of paper roofing, and hives set in the open will not need shade-boards, etc., if put on in the manner he has put it on, which can be easily seen. It is cut a little wider and longer than the cover, and is tacked well at the ends, and one tack put on either side, so as to hold it down. Caps are used with the nails so as to keep the heads of the tacks or small nails from working or pulling through the roofing.

These bees are located on an old apiary site. Perhaps the first modern out-apiary for hundreds of miles around was located on this site. Swinson and Boardman have kept bees here for many years, and so did Mr. Judson Heard; also Mr. S. S. Alderman; and Mr. Durden has had bees on it for a number of years.

THE CAUCASIAN BEES.

As this race of bees has come into our midst to stay, and so far has proven a great blessing to our industry in nearly every

section or locality these bees have been imported, and as there is no reason why they should not be carried into sections where they are not known, and at least given a fair test, it may be that they will prove a great blessing to our industry everywhere. When they first came about, there were some reports from those who had given them only a very limited trial that were not in their favor; but such reports have long since discontinued, and nearly all if not all are in their favor of late years, since they have been sufficiently tested; and I believe such will be the case in nearly every place they are tried. So if I were the only beekeeper who has given them a thorough test and found in them a great superiority over any of the other races of bees, I would be the last man to pen another line in their favor; but hundreds of beekeepers from almost all parts of the country report the same thing after testing them. Now, I feel safe in recommending them to those who are not satisfied, or who do not obtain good results from the bees they have at present.

I obtained three of the first Caucasian queens the government imported; and the second year I had them I had seen enough in their favor to head all the colonies in my home or main yard with queens reared from them; and from time to time I have established from this yard many other yards, and have done no little requeening with this stock, with the result that it has revolutionized beekeeping with me; and adopting this stock has enabled me not only to operate several hundred colonies, but even several thousand colonies. So I can not say too much in their favor from my own experience as well as that of others; and if I am a success as a beekeeper it is due to our government for sending me the foundation stock of this variety of bees; for I had already reached the climax—yes, and went a little beyond if possible—with the Italian and other varieties of bees. I will not assume the responsibility of saying that these bees are just the thing for every beekeeper in all parts of the United States; but while reports from some beekeepers in nearly every section have been made, all have been in their favor.

If it were left to the writer to be the judge he would quickly and frankly say that the Caucasian bees rank higher than any others that have ever been imported into our borders for commercial use.

It is said that almost any kind of hive will suit almost any kind of beekeeper: and the same might be said in reference to bees. But the highly ambitious beekeeper who

wants to make the most of his bee business, and a mark in our ranks, and number his colonies by the thousands, could not even think of adopting any other stock, because they have greater merits or qualities.

THEIR GOOD OR BAD QUALITIES.

Their good or bad qualities, as the writer has found after some years of experience with them from two colonies to two thousand colonies, are these: First, there has been but one very bad quality brought out against this bee, and that was that it propolizes the interior parts of the hive body; but this was not quite so bad as the wads or balls of brownish glue found about in the hive which almost put an end to manipulating the interior parts of the hive. Well, this, of course, was a very serious objection, and hence came the cry against them.

Another slight fault found with them was that they build too much burr and brace comb. But what about these bad qualities in this bee to-day? They have been almost eliminated, and most of it done naturally, too—that is, they have nearly cleared themselves of this objection, or to such an extent that it is no longer an objection. I have done but little if any toward breeding this bad quality out of them; but I learned that if I would give them plenty of ventilation about the bottom of the hive, and plenty of storing room, that colonies most inclined would make only a small deposit of this; and then, too, about the entrance, where it could be removed easily, or would not interfere with frame manipulation if left.

But briefly, what about the good qualities of this bee? Well, I would say this: They embrace every thing that could be expected of any bee—yes, and far more, which are: They are gentler, and far less furious at all times; gather more honey, and give it a much better body, especially if it is inclined to have a thin body, which is common among different kinds of honeys. They will also give it a much better finish in capping. This feature alone is a redeeming one in favor of this bee, for I get 2 cts. per lb. more for the honey they finish in one-pound sections. The capping is beautifully white, and in most cases has a very fine silk-like finish, and in many cases white veins running through the cappings from one side of the sections to the other, running through it like veins in a human body. Then they are less inclined to swarm; build up earlier in spring; queens more prolific throughout the season: requeen themselves more often; in other words, they do not tolerate their old queens as do other races



Fig. 1—A. B. Marchant's scheme of transferring so that the bees do practically all the work.

of bees, and it is more hardy—that is, it will live longer under the greatest strain of its life.

Lastly and naturally, an apiarist can care for more bees with less expense, so far as labor is concerned, and at a much greater profit if he has this bee.

Cordele, Ga.

[The reports that have come in to our office regarding the Caucasian bees do not agree with those that have come to Mr. Wilder—that is to say, those who have tried them to any extent in the North do not seem to be favorably impressed with them. We tested them quite thoroughly, as we thought, at Medina, and were compelled to get rid of them. They are the worst bees we ever had for out-apiary work, as they swarm in season and out of season. In fact, they are much like the Carniolans in this respect, with the further disadvantage that they are bad propolizers, and excessive builders of brace combs. We were very glad to get them out of our yard.

But there is one thing in favor of the

Caucasians, and it is also true of Carniolans—they will breed up early, and they will breed when Italians cannot be coaxed. This very quality might make them desirable for Mr. Wilder in the spring.

But we should like to know how he handles them in the swarming season. If our experience means any thing there would have to be a man at every yard, and that would be expensive. We operate with an automobile which carries our crew with foreman from yard to yard. If an occasional swarm comes out, and is discovered by the farmer or his family, a telephone call will bring one of the boys on a motor cycle, to take care of them. But we have comparatively few swarms, because we use Italians. With our system of management, which, as we figure it, is more economical than to have a man at each yard all the time, we cannot tolerate Caucasians nor Carniolans; and as a general thing we have no difficulty in getting Italians to breed as fast as they ought. A colony that runs to excess in brood-rearing is likely to have chilled brood in the spring.—Ed.]

A NEW SCHEME FOR TRANSFERRING FROM BOX HIVES THAT PRACTICALLY ELIMINATES ALL THE LABOR CONNECTED WITH IT

Charlie Repp, of the Famous Repp Brothers, Fruit-growers of New Jersey

BY E. R. ROOT

When I visited the boys at our Appalachian apiary in March, our foreman, Mr. Ernest Marchant, in the course of our conversation relating to the various methods for making increase, remarked:

"Say, Mr. Root, you ought to see father's method of transferring from box hives into modern ten-frame dovetailed hives. It is the slickest scheme I ever saw. You must

be sure to see dad and let him explain it; and do not forget to take along the camera."

The next day we met the senior Mr. Marchant, and with a launch proceeded up to his Sumatra apiary, where the plan is in successful operation. Fig. 1 shows a row of hives in process of treatment; and Fig. 2 is a still closer view of the same thing.

You may say at first glance, that this

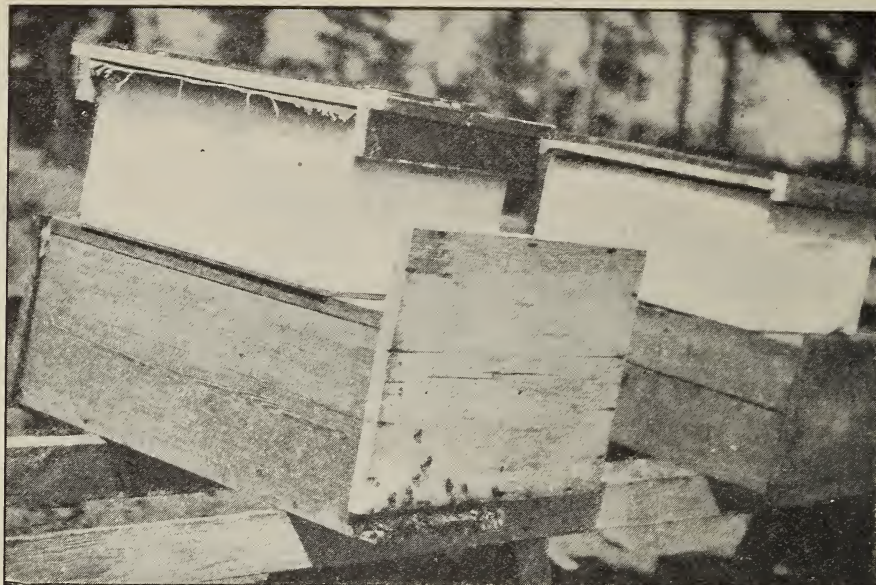


Fig. 2.—Marchant's scheme of transferring. An empty super of drawn comb is placed over an auger-hole in the box hive; after bees and queen go above, a piece of perforated zinc is placed over the hole.

is precisely the same thing that J. J. Wilder described in the *Beekeepers' Review* for March. It certainly looks like it; but, as a matter of fact, it is very different.

While I was adjusting my camera Mr. Marchant went on to explain that he had bought up a lot of old box hives, as he found himself short of bees, paying from one to two dollars for the same. To transfer in the old-fashioned way, and fit the combs into frames, was out of the question. Even the Heddon short method described in our A B C and X Y Z of Bee Culture involved too much work.

"When I get ready to transfer," said Mr. Marchant, "I prepare as many eight-frame supers with empty combs as I have bought hives to transfer. I now approach one of these, lay it on its side, and blow a little smoke in at the bottom. I determine, as exactly as I can, how far down the brood comes. I saw off the hive, combs and all, as close to the brood as I can, and tack a board up against the sawn-off end. I next bore an inch auger-hole in the side or what is now the top, and then place over it one of my regular supers of combs and the job is done for the time being.

"But," said I, "how are you going to force the bees, and, more important than all, the queen, into the empty super?"

"They will go up all right when black tupelo is coming on, and providing I contract the hive capacity of the old gum by sawing it off as I explained."

"Yes," I said doubtfully; "and if the bees go up how are you going to catch the queen?"

"That is easy," said Mr. Marchant. "With a contracted brood-nest and a lack of room, and honey coming in, the bees are bound to go above through that hole, for we know that when honey is coming in bees will occupy empty combs at once."

"But the queen?" I interposed.

"Oh! she will follow the bees."

"But suppose she does," I asked; "will she not go back again into the old combs?"

"No, sir. A few days after placing the dovetailed hive on the old box I make an examination. As soon as I find eggs and brood in the upper part I put a piece of zinc over the hole. In 21 days all the good brood below will be hatched. I now remove the old hive and add another super to the transferred colony, and place the old gum near the transferred hive, and let the bees rob it out. When that is done I melt up the old combs and convert the box hive into kindling-wood."

In proof that such a scheme was working well, Mr. Marchant showed super after super where queens and bees had gone up into the upper hive.

"But," I said, "Mr. Marchant, will this work this way every time?"

"Yes, if the empty comb below the brood in the box hive is cut off, and providing, also, that honey is coming in from some minor sources."

The fact that box hives with black bees can be bought in many places in the South for one to two dollars a gum, makes this method particularly attractive and simple, where one has a preliminary source of honey coming in so as to force the bees above.

The Wilder method of transferring appears to ge a good deal like the one described by Mr. E. D. Townsend some years ago in GLEANINGS.

CHARLEY REPP, THE APPLE-GROWER, AS A TEMPERANCE MAN; BEES AS POLLINATORS.

In our issue for April 1, page 243, I spoke of my interview with the genial Charley Repp, of the famous Repp Brothers, the apple-growers of New Jersey; and in our issue for Aug. 15, 1913, I gave quite a complete description of the fruit-growing operations of these three brothers. It will be remembered that Albert Repp is the grower of the apples and other fruit. Charles Repp is the one who operates the 10,000-barrel storage-plant and ice-making plant; and Joseph Repp is the merchant in Philadelphia who sells their product when

the market is ready. The Repp Brothers have given some very strong testimony showing that they must have bees in their orchards; and they *have* some orchards, for they have 450 acres in Gloucester Co., N. J., that are devoted to the raising of fruit. Some of the strongest testimony that has ever been published showing the value of bees as pollinators has come from Albert Repp, page 562, Aug. 15, 1913; also the *Country Gentleman* for May 24, 1913.

It seems that the Repp Brothers have extended their field of operations in that they now have a cucumber farm at Delray, on the southeast coast of Florida, and a great success it is. When the boys bought land down in that part of the country they were told that it would not be possible to grow cucumbers there, on account of the insect pests; but Albert Repp remarked, "Why not kill them off with insecticides in the form of sprays?" and they did.

On the Repp Brothers' Florida farm there are acres of cucumbers that are being grown successfully, and the probabilities now are that, as they have blazed the way in showing what can be done, winter cucum-

bers will be grown in Florida at a price considerably below what the northern greenhouse growers can produce them. The Repp Brothers are already doing it. I merely mention the incident here to show that the boys, like their father before them, are in the habit of doing what other people said "couldn't be done." That's what makes genius; that's what makes success.

Mr. Selser wrote me while I was in Braden-town, saying



Fig. 3.—Charlie Repp, of the Repp Brothers, the famous apple-growers of New Jersey. "Now fire away with your questions."

that whenever I went over to the east coast on any of my travels I should be sure to see Charley Repp, who was looking after their cucumber farm at Delray. He would arrange, if possible, to have Mr. Repp accompany us on our trip south, as he felt sure I would be glad to get some notes on the value of bees as pollinators. To make a long story short, our cruiser and party arrived in due time at Delray, and Charley Repp was at the dock, and soon piloted us to his cucumber farm of which I have already spoken.

"Bees? Oh, yes!" he said; "couldn't raise cucumbers without bees. There is a colony or two, over there, and there are a lot more of them about half a mile away."

"You are positive that bees are necessary for cucumbers?"

"Yes, I am sure of it," he replied.

As we walked down to the dock I said, "Mr. Repp, I am greatly interested, as you may surmise, in this matter of bees as pollinators, and ever since I read that write-up of you boys in the May 24th issue of the *Country Gentleman*, where you gave such testimony for the bees, I have been wanting to see one of you and ask questions."

On arrival at the boat we took some camp-chairs and sat on the upper deck, and then began our interview. After Charlie had seated himself in the camp-chair that shows in Fig. 3 he said, "Now fire away with your questions."

"Say, Charley" (for I had become well enough acquainted with him by this time to address him thus familiarly), "how many bees or colonies does it take to pollinate an acre of apple-trees?"

"Oh! ask me something easy," he replied, with a merry twinkle. "I can't answer that, as so much depends on the size of the trees and the kind of season."

"Well, *about* how many?" I asked.

"I don't know; but I will tell you this much: We can't have too many. The more bees we can have, the better."

"Why?" I asked.

"Because," he answered, "in some seasons the flights of bees are limited. Bees can't pollinate during wet or bad weather; and during the few good hours of flying weather, of course we need a large number of bees."

"But I have heard it said that there are certain varieties of apples that are self-pollinating—for instance, the Baldwin, and that the bees are not needed on them."

"Possibly," he replied. "We can grow self-pollinating apples; but the varieties are very limited. Bees are necessary to increase the varieties. In order to make apple-growing a success, we must grow the variety that

is best adapted to the climate and soil. Those we grow require the agency of the bees. We can't grow the Baldwins, but we can grow the Winesap, and the latter needs bees."

"How about the value of bees on peaches and cherries?"

"I do not think they are quite as necessary on these blossoms; but apples must have them."

"Well, now, Charley, I have felt that the spraying of trees is a necessity, and that pruning is also a necessity, but that bees are only secondarily important."

"But why are not bees a necessity?" he replied. "We simply can't grow apples without bees—that is, some varieties at least. We can't dispense with spraying or pruning, nor can we with bees."

HOW THE LIQUOR PEOPLE WERE GOING TO
"GET" THE REPP BROTHERS.

"To change the subject, Selser tells me that you boys are strong temperance men; that you have been active in the fight against saloons—so much so that you have incurred the wrath of the liquor people, and that they have threatened to get you. Is that so?"

"Yes," he said, "we have no use for the liquor business, and fight it every chance we get."

"I understand that one of the liquor agents threatened to put you boys out of business."

"Yes, but they did not scare us very much."

"What were they going to do?"

"The liquor agent said that they were going to put out mammoth orchards next to us and undersell us. 'We will get you,' they said, 'for you can't interfere with our business without getting into trouble.'"

"What did you say?"

"I told them I would rather they would raise apples than to raise hell. Then they told me they were going to put up a mammoth ice-plant and make ice cheaper than we could. I told them I would rather see them make ice than to make bums. Then they said they were going to put up a large cold-storage plant and store apples, and then undersell us. I told them I would rather see them fill a cold-storage plant than a jail."

"Did they try to 'get' you in any other way?"

"Yes, they went after our bankers and tried to get them to pinch us. But our bankers were our friends."

"Did they start their apple-orchards and cold-storage plant?"

"Now!"



A city beekeeper standing beside his banner hive.

SOME BEEMEN I HAVE KNOWN; A SUCCESSFUL "BACK LOTTER" RIGHT IN THE CITY

BY WESLEY FOSTER

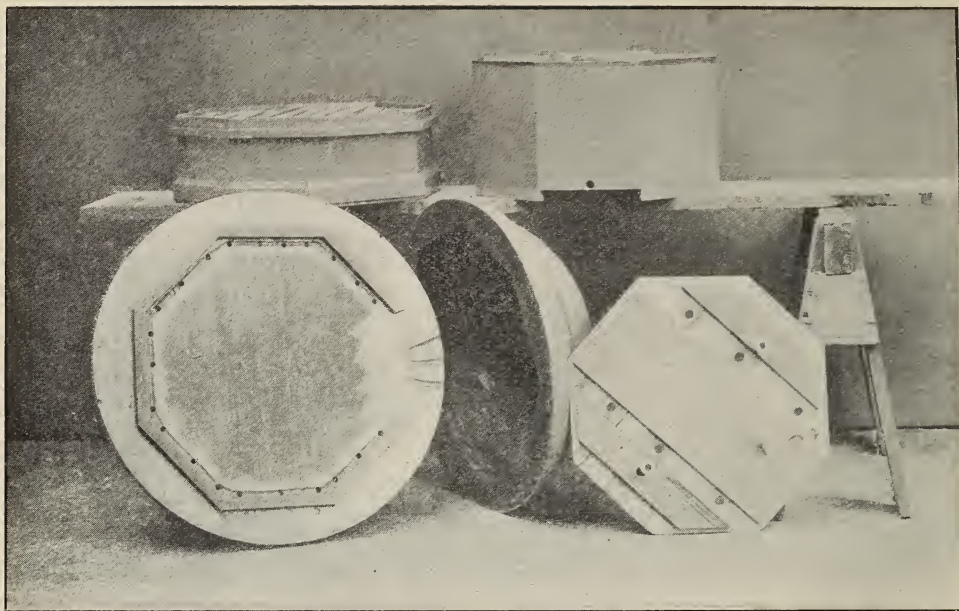
I submit here two pictures that show Mr. J. F. Lyman, of Boulder, Colo., among his bees. The source of his honey-flow is entirely from mountain flowers and sweet clover. The mountain flowers furnish nectar early in May and June, and the sweet clover in July and August. Mr. Lyman is a city beekeeper. He lives right in the city of Boulder, and his little apiary of a dozen colonies is about half a mile from the foothills. The sweet-clover bloom upon which his bees work grows along the roadsides and vacant property in the city of Boulder. Mr. Lyman sold over one hundred dollars' worth of honey from his nine colonies (spring count), the past season. He is the baggage-transfer man for the Boulderado Hotel, and sells the hotel a large part if not all of his surplus crop.

His crops have been remarkable to me because of the lack of suitable bee-range. Last season nearly 500 colonies of bees were located within the city limits of Boulder. In some seasons it seems a location can hardly be overstocked, while other years it is very easy.

Mr. Lyman is shown beside his banner hive. He is using this photo postcard to send to his friends and honey customers. It should stimulate consumption, for it is an example of stimulated honey production.



Some comb honey produced by a back lotter right in a city where there were 500 colonies in the city limits.



Hake's octagonal hive dissected. The picture combines the complete outfit, consisting of brood-chamber, super, super-cover, bottom-board, and hive-cover, painted with deck paint, which gets hard and water-proof like hard enamel.

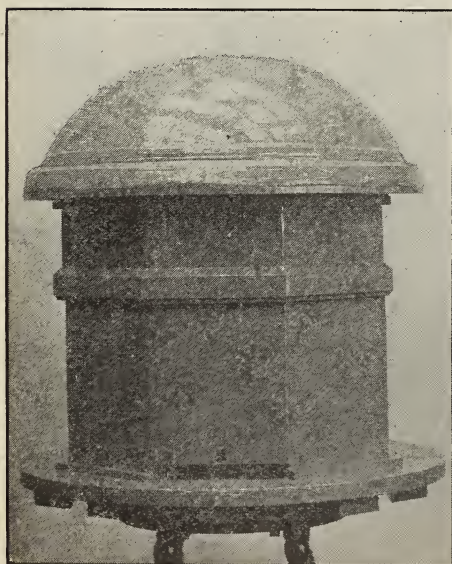
Of course Mr. Lyman is an enthusiast, but does not contemplate becoming a specialist right away, at least. He knows from ex-

perience that all seasons are not as favorable as the last.

Boulder, Col.

AN ORNAMENTAL OCTAGON HIVE FOR LAWN PURPOSES

BY CHARLES Y. HAKE



Hake's ornamental octagon hive for lawn display.

I present here several pictures of a home-made hive of octagon shape. This hive is used for forming nuclei for increase in the early part of the season. It is always in use. I have a strong colony wintering in it. The small open corners are used for feeding. It contains a super with five regular shallow extracting-frames, and six small frames one-half the size shown in photo.

The brood-chamber takes regular half-sized Hoffman frames. Full capacity would be nine regular frames. In this way the nuclei never go to waste, and are always returned to the hive when not in use.

This peculiar-shaped hive makes an attractive ornament for my front yard. I have several real old-style earthen hives, one shaped somewhat like the old straw eke, and another circular one in two parts, a brood-chamber and a super, bell-shaped, with a large handle that lifts off.

York, Pa.

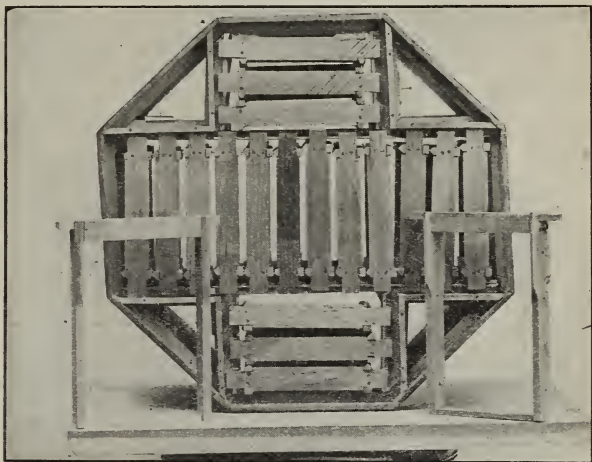
THE HONEY-EXTRACTOR AS A NECESSITY TO THE COMB-HONEY PRODUCER

Some Timely Hints on Spreading Brood

BY THE OUTLAW

One of my first impressions in comb-honey production was that the extractor was unnecessary; that extractors were only for those who make a business of producing extracted honey. That idea is something, however, I have since disproved. In every locality with which I am familiar, and for the benefit of the skeptic, I will state that I am somewhat familiar with comb-honey production from the Atlantic to the Pacific, and from the northern to the southern boundaries of the United States; that I consider that all the comb-honey producers should own and make use of an extractor; for there are times in almost every season in every locality when an extractor is necessary to get the best results from an apiary. The matter that brought this subject to mind was when I overhauled my colonies of bees on the roof. They had received no attention since about November 1, at which time I removed the super, thereby reducing them one story. On examining them about March 1st I discovered that they had filled every cell possible with honey, and that the brood space was confined to four frames, each of which was

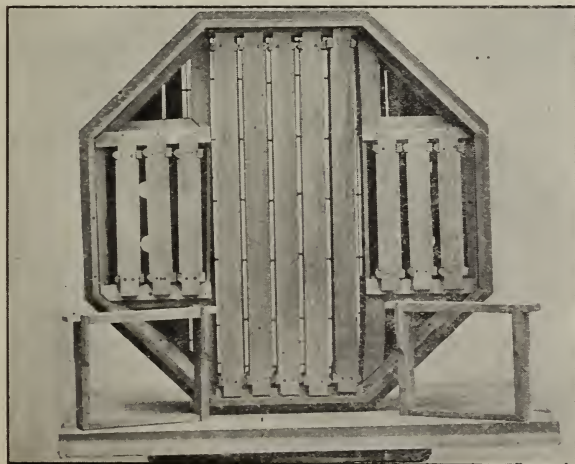
about half brood. I immediately added the super, took out all the frames of honey, and placed empty frames in the brood-nest, thereby giving the queen an opportunity to lay, of which opportunity she immediately took advantage. The empty combs



The scheme of frames in the Hake octagon hive.

that were placed above, and part of the frames placed below, were immediately filled with honey, so again I found myself in need of empty combs. As these I did not have, and having an extractor, I proceeded to place empty frames in the brood-nest, one at a time, waiting until each frame had been filled with comb before giving another one. Following this procedure, in three weeks' time my colony, in place of four frames of brood, had seven—something that would have been impossible had the brood-nest been left in the condition in which I found it on March 1. Two of these combs of new brood were new comb built in the empty frames.

The clogging of the brood-nest with honey is something which very seldom occurs in the spring in the central States; but it does occur later in the season, especially with colonies



Inside of the super.

that have cast a swarm. This applies with double force to those colonies that are allowed to cast an after-swarm. Perhaps here I can best illustrate my point by telling some actual occurrences. The first was in an out-apiary in one of the central States. The apiary had an attack of the swarming fever, with the result that every strong colony had cast at least one swarm. Along the latter end of July I went over the brood-nests of some 40 colonies that had swarmed. From those 40 brood-nests, if I remember correctly, I removed 30 gallons of honey. This was the salvation of those colonies. Had the brood-nests been left in the condition in which I found them, the queens would never have been able to build up the colonies in shape to go into winter quarters properly. It is just as essential to proper wintering that there be plenty of young bees as that there be plenty of stores. Another instance occurred in one of the Rocky Mountain States. There a yard which contained some 40 colonies, spring count, was run only for increase, the idea being only to make as many colonies as possible. This yard was extracted twice during the summer, the extracting being done out of doors. The two extractings totaled 150 gallons. This, of course, was not all taken immediately from the brood-nests, for the reason that, as there was a sufficiency of empty combs, whenever a frame became filled with honey it was removed and placed in a super and an empty frame placed down in the brood-nest. Here honey was only incidental. The idea never was to produce honey, only increase; but in spite of that fact the bees stored 150 gallons of surplus. In connection with this there is another thing that it oftentimes pays to practice in a small way, which, while it is known to most of the old-timers, may be new to some of the younger generation. That is, to take the frame of honey and uncap it, or at least mash the cappings with the hive-tool, and place this uncapped frame in the center of the brood-nest, with the result that the bees will, under the right conditions, take a good proportion of this uncapped honey and store it above, and then utilize the comb for brood.

Another matter that goes with extracting brood-nests is that of spreading brood. Whenever conditions are such that the bees store the honey in the brood-nest, when the apiarist desires brood the spreading of brood should be practiced. In spreading brood, the great danger is in spreading it too much. A colony of bees is something like a sitting hen, as each can cover only a certain amount of brood, and with either it is very easy to give them too much to cover.

In spreading brood there is one hard-and-fast rule—that is, never separate one frame of brood off by itself. Always work them in pairs. For example, if there are but four frames of brood in a brood-nest, separate them in pairs, and place the empty comb between the pairs. If there are six frames and plenty of bees, the six can be separated into three pairs, and two empty combs be placed between them. This matter of extracting the brood-nest and spreading brood is a matter which beekeepers in each locality will have to work out for themselves. There is no hard-and-fast rule that will apply everywhere. It is necessary to understand thoroughly the season as well as the bees, and to consider what the future contains, and then act accordingly.

San Diego, Cal.

[If a comb-honey producer does not have a surplus of empty combs that he can draw on when the queen becomes honey-bound, he surely ought to have an extractor; and there are some seasons that are too poor to produce comb honey. The same may be said of some colonies in good seasons. A comparatively light colony will produce considerable extracted honey when it cannot be made to produce comb. In the same way a good colony in a poor season will produce some extracted but no comb. A comb-honey producer, however, does not need a large four, six, or eight frame extractor. A small two-frame machine will supply his needs.

In the matter of spreading brood, there is a good deal of science to it. An experienced man can very often build up his colonies just as our correspondent points out, and thus be better able to catch a flow of honey later on. Many and many a beginner, and some expert beekeepers who are short of help will allow their queens to become "honey-bound" at just that season of the year when they can ill afford it. An early fruit-bloom in some localities will sometimes absolutely shut out a queen. If three-fourths of the egg-laying room is occupied with honey there will be little likelihood that there will be a sufficient force of bees to gather a clover crop later on.

The "Outlaw," so called, is an old correspondent who has written for GLEANINGS for years, and from different parts of the country. While he is now a practicing attorney we are glad to note he has not lost his interest in bees. The very qualities that made him a student of law will also make him a better beekeeper. His article above may, therefore, be read with unusual care because it relates to some very important considerations for this time of the year.—Ed.]

Heads of Grain from Different Fields

Painting Entrances with Creoso Dip to Stop Robbing

About two years ago I was called by Mr. R. C. King, of Wharton, Texas, to see what was the matter with his bees, for they were dying by the thousands. We opened only two or three hives, when it was plain that they were starving. Some colonies were so nearly gone that the bees had eaten all the unsealed brood. I told him what was the matter, and we got busy with sugar and water. It was about April 15 or 20, with warm days and cool nights. When the bees began on the feed they commenced to try to get into the hives we had opened. I asked Mr. K. if he had any carbolic acid. He said no, but that he had some stuff that smelled a good deal like it, so when he got it, it was creoso dip. We mixed it with water, about half and half, and rubbed it on the hive where the bees were trying to get in. They stopped just as if one had caught them and carried them off. In five minutes they were as quiet as could be.

This fall we had a very good honey-flow that came in October; and when we were taking it off the weather was cool and cloudy, and, of course, we had hardly started before the robbers wanted to help. I had a little bottle of creoso dip; and when I had finished taking the honey out and had put the top on the hive I put a little of the dip around the hive under the edge of the top, and worked right along with as good results as if it had been fine warm weather with a good honey-flow on.

With the smoke plan of introducing queens, and $\frac{3}{4}$ -inch blocks to prevent swarming, and creoso dip to stop robbing, what else do we need except a good honey-flow for ten months in the year to make a success of the bee business?

Lane City, Tex., Nov. 10.

W. H. MOSES

Swarming without Increase

Last season, in hiving swarms we did not wish increase, so we put them into a hive as usual. That same afternoon we removed the parent hive a few feet away, and put the swarm on the old stand. Next morning we took brood, bees, and all from the parent colony, and gave them to the swarm, watching the frames to see that we did not get the queen in; and then we shook the bees remaining in the hive on the ground in front of the new colony. We could not take the time to find the old queen in the swarm. This plan worked finely last season. Colonies so treated worked with more vim and energy, and made more honey, than other colonies, and we could not see that they started queen-cells any sooner than if not given brood and bees from the old colony. Since the old queen is left in the colony, what trouble, if any, shall we get into by keeping up this practice? We can not follow directions given in the A B C and X Y Z of Bee Culture, because we use the Langstroth improved Simplicity hive. On account of the rim we can not use one over the other.

We wish to use some shallow extracting-supers, keeping them on long enough to induce the bees to work above them, and put on section supers. Can we use them without queen-excluders?

Whiting, Kan., March 23.

JOSE GRAY

[There is an old saying that "nothing succeeds like success;" and if the method of swarm control which you are using works well with you, then, most undoubtedly, that is the method to use. However, it is not new, but has been tried out by many beekeepers, and abandoned because it too often fails to give the desired results. In many cases the bees, after having been hived back on the old combs, would swarm out the very next day, or would loaf until

another batch of queen-cells was well under way, and then swarm again. In beekeeping it often happens that a plan which will work well one season will be a failure the next, and we would advise you not to count too much on this method until you have tried it out at least another season. If you follow up this practice it would be well to see that your old queens are replaced with young ones at least every two or three years, or you will finally have a lot of weak colonies on your hands. This will be due, of course, to the natural failing of the old queens.

Your plan of using shallow extracting-supers to induce the bees to work above before putting on the section supers is a good one. However, unless you use a queen-excluder you run the risk of your queen laying eggs in them. In that case the brood can be used to strengthen weak colonies.—ED.]

Death of Aaron Snyder, a Noted Beekeeper of New York State

Mr. Aaron Snyder, of Kingston, died March 3, 1914, in his 71st year. He was born in Albany County, N. Y., in 1843, and was a beekeeper from the time he was 16 years old. In 1889 he moved to Kingston. Here he ran from four to five apiaries, one being at his home bee-farm just in the edge of the city, and the others within driving distance, from two to six miles away.

Mr. Snyder leaves a wife and four children, all of whom are married, and live close to the old home. They have helped him in his business to such an extent that he has his letter-heads, and all of his honey-labels headed with his own photo, followed with the words, "The Snyder Bee and Honey Co."

Mr. Snyder was a practical apiarist. He had an inventive mind and made many changes, and used many kinds of hives. He produced mostly comb honey until the last few years, when he produced extracted honey.

His choice of hive was a nine or ten frame, 18 inches long and 12 inches deep, with extracting supers half the depth of the hive, holding Hoffman frames. He believed in selling his own honey, and could not produce all of the honey that he could sell, as he kept agents on the road as salesmen. He bought honey by the barrel, in addition to what he produced himself to supply his customers. He put up his honey in one-pound bottles, and some in five-pound pails, being careful to use good honey.

His agents would take back any honey that candied, and exchange it for liquid honey. This candied honey was then heated in his shop, and new labels put on the packages for the market.

In politics Mr. Snyder was a Prohibitionist. He was a hearty good fellow to meet at his home or elsewhere. He will be missed at our bee conventions, and by all who knew him. He had a jovial way. When in good health he used to stretch himself up by my side, then give me a couple of slaps with his hand, and say, "We are about the same height, and weigh in the same notch (212 lbs.), twin brothers." I should like to say more about his kind and happy family, but space forbids.

A FRIEND

Increasing by the Nucleus Plan

After reading the editorial on page 83, Feb. 1, I thought I would give my experience in making increase without materially weakening the old colony.

In the spring of 1912 I had 60 colonies of bees, and I wanted to increase to 100; but I did not want to let them swarm, nor divide them, as I wanted to secure a large crop of honey. So I decided to increase by the nucleus plan. I set to work to rear my own queens, so I could give the nuclei laying queens as soon as I started them. I started almost all of

the nuclei on the first of July with one big frame of sealed brood or two small frames, with all adhering bees, and gave each one a laying queen and drawn comb. Nearly all of them built up to good strong colonies by August 10, about the time the fall honey-flow commences, and they gave me an average of 30 pounds each of surplus honey, besides their winter stores.

Brook Park, Minn., Feb. 9. HARRY BELL.

Increase the Consumption, Stimulate the Market, and Stiffen the Market of Honey

Are you reading the series of articles running in the *Saturday Evening Post*, by Forrest Crissey? They are a revelation to those who are not familiar with the "Association way" of doing things. He has made a thorough study of associations, and in these articles he compares the old, narrow, "cut-throat" ways with the association methods now successfully in use in many vocations. He tells us how competitors who a few years ago were fighting one another, each trying to build up his own business by tearing down that of the other fellow, stealing trade secrets, processes, customers, and even skilled workmen, are now sitting side by side at the association meetings, "swapping" information, improved methods, and co-operating in every way for the uplift of the vocation, using the energy formerly required in tearing each other down to boost the trade generally. In this way each is benefited financially, morally, and (I trust) spiritually by the association of effort.

Almost all vocations are now taking up publicity for their products in the association way. Some of them pay their professional "boosters" a princely salary. I can name half a hundred associations that are advertising their products, not as individuals, but for all as an association. These progressive associations are forging ahead, while the few that cling to the old traditions and stay in the narrow rut are not getting on.

When we compare the real food value of honey, and the prices we are getting for it, with some of the well-advertised products, we find that they are getting more money for less value, and selling more goods; and about in the ratio of the publicity given them, these other goods are in advance of our product.

We have only ourselves to blame for this condition. We have increased our production, depending on the good qualities of our product to sell itself. But business is not done that way now. It used to be; and when it was, honey was at the head of the list of all the good things. Nowadays we all eat just what shrewd publicity men can convince us is necessary, sometimes against our better judgment. At the same time we are offering a delicious, wholesome product with a high food value, admirably fitted to take the place of meat on the laborer's table, or to grace the most exclusive banquet as the most dainty of delicacies. In spite of its manifold virtues, we find thousands of tables where it does not appear at all, and I have known grown-up persons who never tasted it in their lives.

There is nothing surer than the fact that honey will respond to proper publicity and pushing. We have a case in point up around Chicago, where some enterprising young men are "boosting" extracted honey, and a medium amber at that, and they sell tons and tons of it at a good round price, and do it year in and year out. Honey advertising, local or general, will give results as very few other products can, as it has value, real value as a delicacy, and as a health and strength giving staple.

We are likely to have a bumper crop this year, as the conditions are favorable everywhere, and we have the remnants of the last year's crop to clean up. But with proper united effort we can handle this big crop and stiffen the prices also. We have

20,000 beekeepers brimful of enthusiasm, ready to attempt any thing that promises to advance the interest of the industry. We have manufacturers of supplies whose business would be doubled if we double the production. We have big-hearted editors of bee-papers who will help us every way they can; and all these, and the others who will be benefited by the uplift, must work, individually and as an association, to increase the consumption, stimulate the market, and stiffen the price of honey. Alone, each of us can do a little; but all together, like a well-drilled army, we can do wonders in this direction. Do you belong to the association? If you do, get busy and boost. If you do not belong, get busy and join so you can help boost. If you have only 200 lbs. of honey for the market it is a good investment, and the association wants you.

GEO. W. WILLIAMS,
Secretary National Beekeepers' Assn.
Redkey, Ind.

How to Prepare a Car of Bees for Shipment

I am going to ship a car of bees to my place in a few days; and as I have never done any of this work I don't know much about it. They will be shipped only about 150 miles. You people have had considerable experience, and any thing you suggest will be gratefully received. I shall have to change roads on the way. How can I get the car transferred most quickly?

St. Joseph, Mo., April 7. J. F. ARCHDEKIN.

[In shipping a car of bees from one point to another, especially where they have to be transferred, it is very important that arrangements be made well in advance before the car is started. To that end ask your agent to have the matter looked up so the transfer can be made promptly at the transfer point.

The hives should be very securely braced in the car to prevent any jarring or shaking one way or the other. The hives should be loaded so that the frames will be parallel with the rails. If you have as many as two or three hundred colonies it will be necessary to make a very strong and rigid framework to hold the hives in tiers one above the other. The frames should be fastened if not of the self-spacing type, and during hot weather there should be a wire screen at the top and bottom of the hives. In addition it is important to have water along so that the bees can be sprayed if they get too warm or get to roaring too much in the hives. Of course, it is important to have a man go with them, and he must be prepared to stay up with them almost night and day until arrival at destination.

It is desirable to get the car as far forward in the train as possible to avoid the smoke from the locomotive; and, besides, at that point there is a little less jerk when the train is started and stopped.

We cannot emphasize too strongly the importance of having very strong framework, for the concussion of the train is something terrific at times, and it will knock down almost any ordinary light framework unless the whole thing is made rigid and strong.—Ed.]

Combs Melting Down

As a bee country this upper Sacramento Valley is nothing to brag of. During a long warm or hot season the heat is sometimes excessive. The past summer combs and foundation melted to a considerable extent, and shade and ventilation did not prevent it. With hives ventilated both below and above, and top and sides shaded, I had much loss from melting combs. The strong colonies suffered less than the weaker ones. A neighbor beekeeper had his comb honey melted in the upper story of his house, which was well ventilated. The air seemed to be actually hotter outside the hives than in them.

Orland, Cal., Jan. 25. P. P. MARTIN.

A. I. Root

OUR HOMES

Editor

At the same time came the disciples unto Jesus, saying, Who is the greatest in the kingdom of heaven?

And Jesus called a little child unto him, and set him in the midst of them,

And said, Verily I say unto you, Except ye be converted, and become as little children, ye shall not enter into the kingdom of heaven.—MATT. 18:1, 2, 3.

Just recently, in the city of Cleveland a new society has been started, called, if I am correct, the "Safety First Society." It came into existence because of the increasing number of children maimed or killed by electric cars, automobiles, motor trucks, etc. Its object is to educate the children, parents, teachers, and everybody else, for that matter, how best to avoid the deplorable and preventable catastrophes chronicled in every daily paper. Proper teachers are to warn the children in regard to playing with matches, drinking or eating stuff out of bottles, running before automobiles or street cars, etc. Children and others are also taught what to do when their clothing is on fire; remedies for poisons, danger of going in swimming when very warm; reviving a drowned person, etc. I think these matters are to be not only brought up in our schools, but "taught up" as well. God speed the undertaking, and may it *speedily* bear good fruit.

The whole matter was brought to my mind by an incident of less than a week ago.

We had just been having a heavy rain, and the ground was just in trim for setting out plants. By mere accident, as it seemed, I went down to the lower part of our garden (where it adjoins the "swimming-hole" in the canal), and commenced transplanting cassava "rooted cuttings." Looking over the wire fence I noticed two boys, perhaps a dozen years old, preparing to go in bathing. As I overheard their frolic as they chattered and splashed in the water I got to thinking what a fine thing it was in many ways to have a safe place where children could be happy in the water. After a little time I heard sounds that did not seem exactly like "play." I found one boy standing on my side in the water, and the other on the far side, apparently diving again and again. While I was wondering that a boy of his age could remain so long under water, it suddenly occurred to me he was exhausted, and I yelled to the one near me:

"The boy is *drowning!* don't you see?"

"Yes, I know he is."

"Well, hustle over there *quick* and pull him out!"

He only shook his head and didn't move.

"Hurry up, or he may never come up again. You *must* not lose a minute!"

Although his comrade and playmate was fast losing strength, and not a dozen feet from shore, and in comparatively shallow water, I *could not* get him to budge an inch. A responsibility rested on my shoulders I scarcely ever felt before. While I meditated climbing the high barbed-wire fence and plunging into the chilly water, old as I am, I caught sight of Wesley at work a few rods away. I yelled, "*Come quick!* boy drowning!" After some delay in getting Wesley over the fence he plunged into the water, I all the time hurrying him up. I did not know it then, but Wesley *cannot* swim. After he had waded until the water was up to his chin, and the boy still beyond his reach, he hesitated. Let me say here that never before have I known Wesley to hesitate an instant when I told him what to do. The boy lay on the bottom, and had ceased to move, and I was in mental agony for fear he would get down into the deep water. I said, "Wesley, you *must* push on and get the boy before it is too late," and then, oh how I *did* pray that the next step might find higher footing, and the prayer was answered. Wesley dragged the apparently lifeless body to shore, and after I had directed him to put his head down hill so the water could run out of his lungs I alarmed the neighbors, then I rushed back and called to Wesley:

"Any sign of life?"

I thought of the prophet Elisha and Gehazi, and then called back, as I was off quite a distance.

"*Now put his head up hill, and roll and rub him!*"

Then I got to a telephone and called a town doctor, and also got Dr. Morgan (one of our family of beekeepers), who is old like myself, and many years out of practice. I prayed again as I ran back; and when in sight, as I heard the welcome news, "Boy is all right," I changed my "prayers to praises."

Wesley says there was no sign of life until the boy coughed and sneezed, and expelled great quantities of water from his mouth. When I talked about getting him home, he laughed and said, "Ho! I am all right," and the two started off as merry as if nothing had happened; and although he promised me to tell his father all about it I am really afraid that, child fashion, he will forget to say anything about it. The doctor felt his pulse, and said he guessed his narrow escape had done him no harm.

Just a few days ago a beautiful bright little girl was shot and killed by her brother, in our neighboring city of Akron. Her father, as former sheriff of this county, had a revolver; but as he always removed the shells when putting it away it was a mystery for some time as to how it could have been loaded. Finally it was discovered that a young brother found where the shells were

kept, and put one in the revolver as he had seen his father do. Shall we all not be more careful of these murderous firearms? If they *must* be handled, shall we not avoid letting the children get even a *sight* of them? Year in and year out, our papers are telling the old, old story, "Didn't know it was loaded."

TEMPERANCE

"GOD'S KINGDOM COMING."

We clip the following from the *Cleveland Plain Dealer* for April 6:

DANIELS PUTS END TO LIQUOR IN NAVY; ORDER CONSTITUTES NOTABLE VICTORY FOR PROHIBITION FORCES; GOES IN EFFECT JULY 1; EDICT WILL PREVENT USE OF INTOXICANTS ON ALL SHIPS AND LAND STATIONS.

Secretary Daniels to-night made public an order which not only will abolish the traditional "wine mess" of officers, but will bar all alcoholic liquors from every ship and shore station.

This order, one of the most notable victories ever won by prohibition forces, was issued on recommendation of Surgeon General Braisted. It reads:

"The use or introduction for drinking purposes of alcoholic liquors on board any naval vessel, or within any navy yard or station, is strictly prohibited, and commanding officers will be held directly responsible for the enforcement of this order."

In a statement issued to-night Secretary Daniels said:

"I am in hearty agreement with the views expressed by the surgeon general in his paper accompanying the recommendation. There should not be on shipboard, with reference to intoxicants, one rule for officers and another and a different rule for the enlisted personnel. The saddest hour in my official life is when an officer or enlisted man must be punished for intoxication.

"During the past week it has been my painful duty to approve a courtmartial for dismissal from the service of an officer for intoxication. He told me that he had never tasted intoxicating drink until he did so in the wine mess on his cruises. Others, who have been disciplined for drinking to excess, have made similar statements to me.

"Officers are now commissioned at the early age of 22 years. Has the government a right to permit this temptation which too often destroys the highest usefulness of young officers? I think not. If there is one profession more than any other that calls for a clear head and a steady hand it is the naval profession. Experience has shown the wisdom of having no intoxicants on our ships for the young men who enlist."

Some time ago I read the *Chicago Record-Herald* with much interest; but its liquor advertisements were so offensive I protested. As it seemed to do no good I dropped it. See the following from the *American Issue*:

RECORD-HERALD CUTS OUT LIQUOR ADVERTISEMENTS.

The *Chicago Record-Herald*, one of the great daily newspapers of the United States, in its edition of last Sunday, gave notice that it has decided to eliminate liquor advertising from its columns. It will fulfill its existing contracts to print this class of ad-

vertising, and having done that it will accept no more. In a statement of its position the *Record-Herald* says:

"The *Record-Herald* goes into many thousand homes. In virtually all of these homes there is an abiding sense of the need of protection against the use of the liquor traffic, especially for the young. In constantly increasing degree there is abstinence from the use of liquor for the sake of the young. There is the haunting fear, that from the first indulgence the young and unformed character may unconsciously drift into an uncontrolled and destructive habit of excess. Liquor advertising does not discriminate between use and abuse. It commends without reserve what the best social sense of the day more and more disapproves as dangerous."

This places one more of the great newspapers of the country in the rapidly filling column of those who refuse to be longer known as barkers for saloons for the sake of the dollar.

VOTING WET, LICENSING SALOONS, ETC.

The following was sent us by Dr. A. F. Bonney, Buck Grove, Ia., and it seems to me it sums it up pretty fairly.

I am the mightiest king that ever lived. Other monarchs have yielded to me as a child to its sire. I have in every land laughed at their gods, from Osiris to Jehovah.

With my breath have I wiped whole nations from the face of the earth.

For me men discard honor, and women virtue. I destroy ambition, shame priests, debauch nuns, ruin statesmen, and—still they love me.

I fill the insane-asylums and the prisons. I house my subjects in hovels and feed them on husks. Still they love me.

Fathers give me their sons, mothers their daughters, maidens their lovers, and—beg me to stay.

With one touch have I ruined great industries.

Judges yield to my power, and advocates forget under my spell to plead.

I burnt Rome. With one touch have I sunk navies and destroyed great armies.

I never sleep.

I turn gold into dross, health into misery, beauty into caricature, and pride to shame. Yet the more I hurt the more I am sought.

I by turns raise a man to highest heaven and sink him to deepest hell.

I am Satan's right-hand man. I do his work freely, cheerfully, and without pay; yet the father of lies is ashamed of me.

My name is Rum. Have you ever heard of me?

Just now I am a little pressed, and I ask that you sign my next petition of consent, for only I can turn men to brutes and women to worse, and have them still seek me, and continue to until I am driven out. Help me. Give me your son, your daughter, your lover. Give me your honor, wealth, and life. Just now I need the help of honest men.

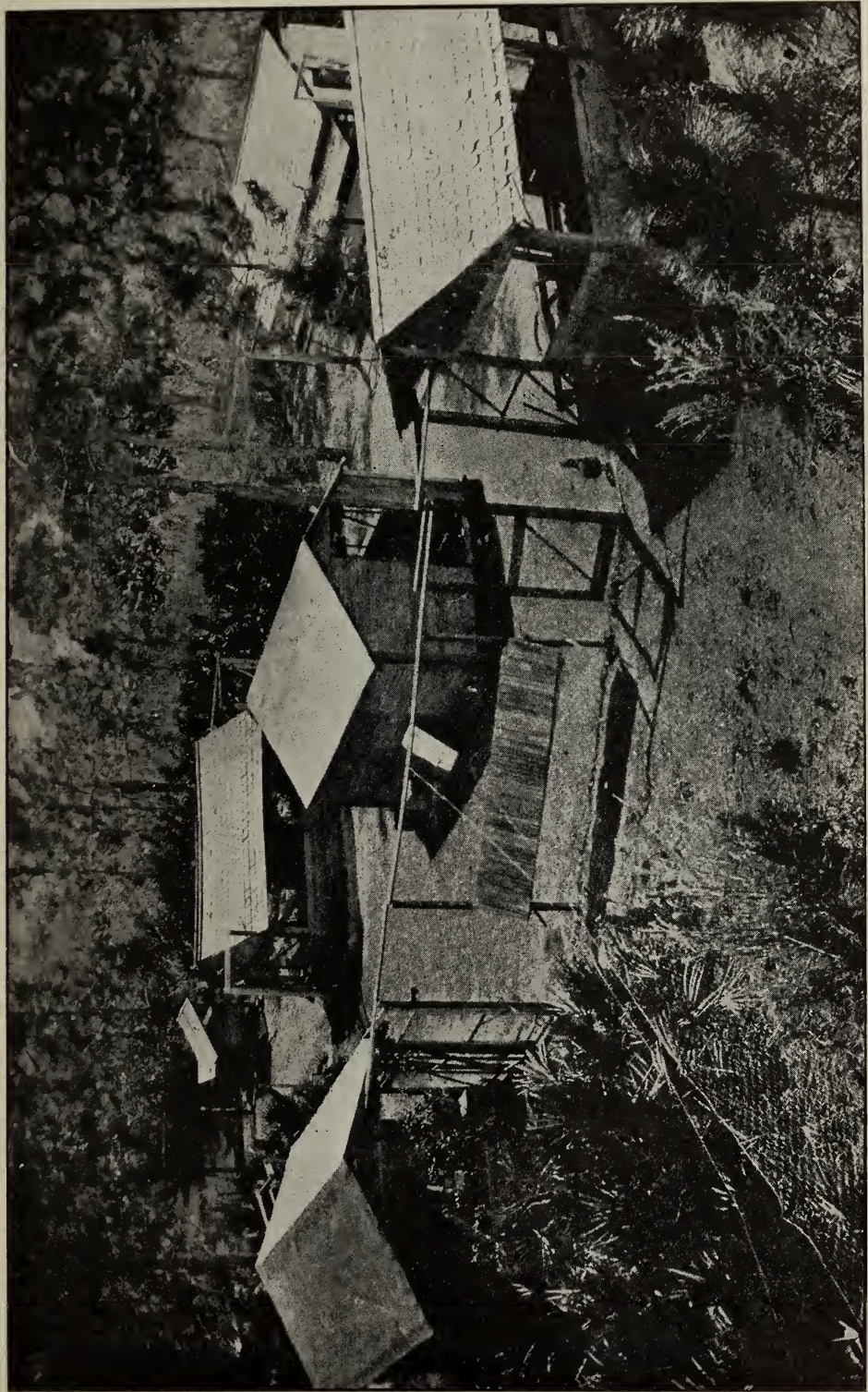


FIG. 1.—Our “convergent” poultry yard and buildings as it appears, adjoining our Florida home at Bradentown.

POULTRY DEPARTMENT

THE CONVERGENT POULTRY-YARDS UP TO DATE; SEE CUT ON PREVIOUS PAGE.

In GLEANINGS for July 1, 1912, I gave you some diagrams, etc., of the above poultry-yards. These pictures were at the time largely theory. I now take much pleasure in giving a real picture of the place where I spend many happy hours. Ernest secured the excellent view of it all by mounting a long ladder (with his kodak) leaned up against one of the pines, such as you get a glimpse of in the picture. Suppose I go

"waterfall") I supposed that they found plenty of shells on its pebbly bottom. However, as we are now getting from 12 to 15 duck eggs every day I concluded to give them all the shells they wanted. The ducks have a yard where they stay nights, at the upper left-hand corner. There is a very small structure where they can get out of the hard rain in their yard; and the lane where they get down to the canal is just beyond this small covered shanty. If I don't get around promptly to open this gate at 8:30 A.M. there is a chorus of 18 voices in protest.

On the north, south, east, and west of this granary, and at equal distances from it, are four similar buildings. Each one is divided in the middle with a wire partition, thus making eight separate houses, and each of the eight has a separate yard, the division fences running out like the spokes of a wheel.

These fences go out off in the woods as far

over it with you all, something as I take visitors through it and "explain things," as I do more or less almost every day.

The central building is the granary where all the feed is stored, and where we have a bone-mill for grinding bones and scraps of meat from the butcher's, about twice a week. On the north of this building you will notice two boxes, one containing ground oyster-shells and the other mica crystal grit. The whole crowd of about 100, big and little, visit these boxes almost constantly; and just a few days ago, when the gate was left open, I noticed the Indian Runner ducks (18 in all) greedily gobbling up the crushed shells. As they run in the canal every day (see picture of

as the chickens care to travel. You can see one fence in the foreground. It is looped up to a stout wire. When this fence reaches the "inner court," as we call it, you see a group of eight covered nest-boxes. As I am an old man, it is something of a task for me

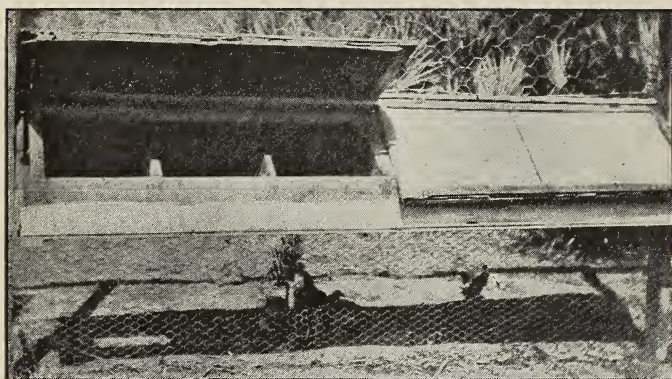


FIG. 2.—A view of the other side of the nest-boxes shown in Fig. 1.



FIG. 3.—The wire netting basket used when I feed the flock lettuce, mustard, cabbage, beet-tops, etc.



The W. W. Red hen that had 20 eggs and hatched 19 chicks. I tried to call them up with a head of lettuce, but they were rather shy of the kodak, and skulked off among the palmettos.

to stoop over in gathering the eggs daily, and so I have the nests at a convenient height. The roof on the opposite side is hinged (see picture No. 2), and when thrown up and back I can get the eggs, handle sitting hens, etc., quite easily. The bottoms of the nests are inch netting, so all the fine stuff rattles through. I think this plan favors keeping out vermin. At intervals fresh dry grass is supplied. Each one of the eight apartments contains a galvanized tub fastened on top of a post about 18 inches high, and these tubs always contain wheat and corn. Even the small chicks soon learn to fly up into these tubs; but a Florida rat, never. Where each *diagonal* yard strikes the inner court, there is a pan of water; and this water is always clean and fresh, for the windmill keeps water dropping into the pan day and night. One of these pans is just visible nearly under the nest boxes, each pan supplying two yards, as you will notice.

I will explain right here that the original idea was to have all gates closed, and no fowls allowed in the inner court. Well, this is all right on the start; but I soon learned each flock will stick to its own house and yard pretty well after it has been kept shut up for a few days. It saves lots

of work to leave the gates all open except the ones that confine them safe from intruders in the night time. It is my pleasant task to shut all the doors as soon as all are on the roost at night, and to open again as soon as it is light enough for them to want to go out in the morning.

I have told you elsewhere how we now care for the droppings; and it is a pleasant task to sweep out the inner court with a broom so it looks neat and tidy when visitors come around. I confess, however, when we have such abundant and frequent hard rains as we have had this winter, it sometimes is a little "sloppy" until the water soaks into the sandy soil, and to further this, Wesley and I have just been putting in tiles beside the surface drain around each building. A hundred fowls give about a dozen to each of the eight apartments, and if there are many more than this on one roost, there is more "nagging" by some of the older and more important "biddies." Each hen with her brood of chicks has a house and yard to herself, and I tell you this is a great convenience. I like to give the youngsters bread and milk; but when you do this you don't want any "grown-ups nosing around."

Oats are buried in the soft mellow soil

(with a cultivator) in every yard, about twice a week; and although the ducks don't scratch, they are as fond of digging out the soaked oats as are the chickens. When the young roosters get big enough to annoy the pullets they, too, need a yard all by themselves. In order to get a vacant yard, we often double up temporarily; and as each house and yard is a duplicate of the others, the moved fowls always know where to get food, drink, etc. Much has been said about dispensing with males; but a good rooster will keep his flock together, and will take them away off down by the canal and into new forage where they may get a large part of their food better than a flock of hens.

In cut No. 3 they were a little backward about crowding up around the "greens," because Ernest was a stranger. One hen, however, it seems, was immodest enough to hop into the basket and give us all a "backward" view in another sense of the word. Notice the different colors that crop out by my cross of Buttercups and Leghorns. Just

now (March 10) we are getting from 35 to 40 eggs a day from 50 layers, and two days we had 44 eggs. At 30 cts. a dozen this, with the ducks, pays very well. A visitor remarked a few days ago, "Why, Mr. Root, with your fine outfit it almost looks as if you had nothing to do but 'gather the eggs,'" but I tell you such a ranch needs pretty close watching several times a day to do its best. Sitting hens should be spotted and taken away just as soon as a symptom is visible; and quite often *something* goes wrong that needs righting at once.

CASSAVA FOR CHICKENS, ETC.

Mr. A. I. Root:—Cuttings are about four inches long, cut ready to plant; are planted about 4 x 4 feet; or 4 x 5 on good well-drained land will make from ten to twenty pounds of roots per hill; does well on the high sand hills. It makes good feed for cows and pigs, horses and chickens, also for table use, grated and made up like sweet-potato pudding. Four pounds is equal to one pound of corn as feed. It will stand shipping by freight. I have grown it in this section for the past 25 years.

Loughman, Fla., Mar. 14.

R. ADDISON.

HIGH-PRESSURE GARDENING

THE TWO DASHEEN TUBERS SENT OUR SUBSCRIBERS, ETC.

Since my brief notice that the tubers were ready to mail I have addressed more packages than I have for years past; but the kind words that came in almost every letter or on every postal card made the task a very happy one. I presume they are mostly planted by this time, either indoors or out; and you may be glad of some suggestions as they begin to show their snow-white shoots and unfold their pretty green leaves. Old decomposed stable manure will likely be the best "feed" for their tiny rootlets; then give them water as fast as they seem to need it. As they need much sun and heat give them a place sheltered from the cold winds. Although they are a sort of water-plant there must be good drainage. If they can get their white roots down into damp loose soil, that will suit them. Years ago I had a good deal to say about "Father Cole's" "New Agriculture." The plan was to gather and bury the rocks and cobble stones on the farm, in a pit. On top of the rocks was brush, old straw, and coarse stable manure, and then the soil. The roots of the growing crops would go down into the water between the stones and trash, and be immune to drouth. We have been clearing our wild land by burying weeds and

bushes in the same way, and this suits the dasheen to a dot. Ours are at present making a most astonishing growth.

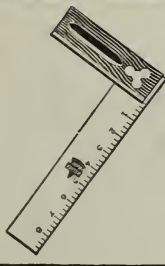
Now here comes in another most wonderful thing about this plant. After it has grown a foot high or more you will notice tiny suckers shooting out around the parent stem. This is the way in which it multiplies. So far as I know it never blossoms or bears seed. Well, these suckers, if left, will each make a tuber springing out from the central parent tuber, or "corm;" but if you want rapid increase take them off at any stage of growth, and plant them out. Our finest bed was made by taking up our old plants and separating them until each made a dozen or more, and not one of the lot even wilted a leaf. Some of our oldest "clumps" will now give us 20 or 30 good plants for a new plantation. Of course, this latter is possible only where the plant can grow every day in the year, because we have no frost. Let me repeat: Every bit of the plant is always edible every day in the year—the tuber under ground, the leaf-stalk, both under and above ground, and the green leaves on top of the stalk. It is not *only* edible, but delicious and nourishing food. Huber and his wife are here with us in our southern home, and they too seem never to tire of what we call "dasheen asparagus" and dasheen "spinach."



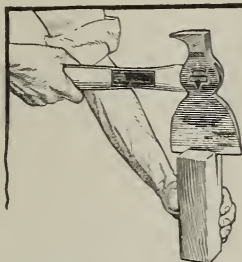
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Hammer, No. K612, Price, \$0.70
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Try Square No. K1229
Price, \$0.50



Tools That are Tested and True

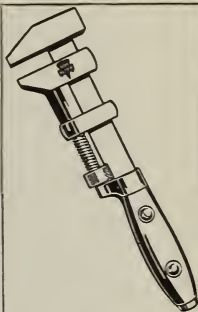
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tools work true, because they're made accurately from first grade live steel and thoroughly seasoned wood. They have the Keen Kutter spirit because they stick to their job and *get there*. It's the same with Keen Kutter tool or piece of cutlery goes back on you the dealer is authorized to take it back and refund your money.

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Ed. H. Witte

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WITTE ENGINES

DIRECT FROM FACTORY TO USER!

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Get my latest and best offer—all complete with my New Book, the finest in the engine business. Write me before you arrange to try any engine.

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No Need Now to pay double price for any good engine, or to take a poor, or doubtful one for any kind of price.

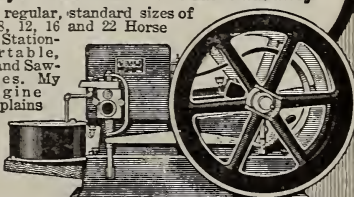
For 27 years (since the beginning of gasoline engines) the WITTE has proved its value at all kinds of work, in all parts of the world? It is today **better** than ever, while the price is **lower**. My manufacturing advantages make this possible. I am simply sharing my unusual advantages with engine buyers. Let me write you more about the WITTE and post you on engine buying.

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Little capital
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Back you up—Don't doubt—

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You cannot lose. My other men are

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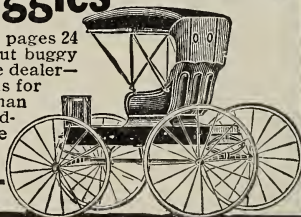
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Just read pages 7 to 11. Then read pages 24 to 32. Then—you'll know more about buggy construction than your local carriage dealer—and you will see how unnecessary it is for you to pay \$25.00 to \$40.00 more than Phelps asks for the best of Second-Growth Split Hickory Buggies. Write for that book this very minute.

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FREE TRIAL 30 DAYS BESSEMER KEROSENE ENGINE

Success with cheap kerosene or coal oil absolutely guaranteed. Try before you buy. Most economical, reliable and durable engine made. So simple and easy the wife or boy can start and run it. People everywhere throwing away their old engines, buying Bessemer and making money by it. Get one for yourself. Be ahead of your neighbors. Runs fast or slow. Will do a dozen things at once. Wonderful beyond belief. Pays for itself in fuel saved. For special discount write at once.



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Non-Clog Atomic Nozzles

Greatest nozzle ever invented. Time, labor, money saver. Cannot clog with any solution. Fits any make of sprayer.

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40 styles and sizes. Over 300,000 in use.

Write for Spraying Guide—FREE.

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of these famous spraying nozzles purchased by one dealer!

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They will not attack or come near woodwork if it is painted with

AVENARIUS CARBOLINEUM

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and will stay away from beehives so protected. Write for circulars.

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THE BEST LIGHT

200 styles—carry a brilliant illumination into homes that have had to struggle along on oil, gas or candles. Brighter than acetylene or electricity and costs only two cents a week. Agents write to-day.

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6¢ PER Ft.

Lawn Gates only \$2.25. Close two 48 in. Stock and Poultry Fence 27c a rod. Heavy 49 in. Field Fence 24c a rod. Hog Fence 14c a rod. Barb Wire \$1.40 a spool. 60 days' trial.

We not only lead on prices but on quality as well. Our great FREE Catalog proves it. Write for it today. It saves you money. The Mason Fence Co., Box 88 Leesburg, O.

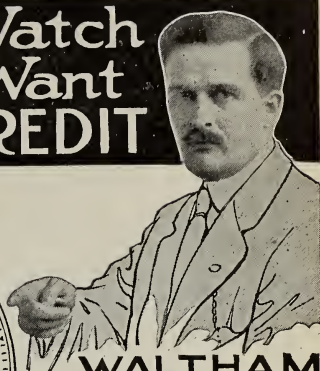
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This is an excellent book for the beginner. Nothing better. We cordially recommend it to all who are learning beekeeping by their own effort. Having commenced beekeeping three times, the talented author is in a position to furnish the right kind of advice. You can not go wrong in getting this book. It is charmingly written and easily understood. Price \$1.10 postpaid.

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Health? Take Turkish Bath at Home—Only 2 Cents



Physicians are abandoning drugs for this new treatment. If your mind or body is tired, or you have rheumatism, blood, stomach, liver, kidney and skin troubles, open your pores, and feel the rapid change in your condition, at cost of 2c a bath. The Robinson Bath Cabinet is the only scientifically constructed bath cabinet ever made for the home. **Great \$2 Book Sent FREE**—"The Philosophy of Health and Beauty." Write today. Agents wanted. **ROBINSON MFG. CO., 1011 N. Twelfth Street, Toledo, O.**

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QUEENS FROM CARAWAY'S PRIZE-WINNING STOCK

THREE-BANDED ITALIANS READY TO MAIL NOW.—GOLDENS FURNISHED ON REQUEST.

Italians	Nov. 10 to April 10			May 10 to June 10				June 10 to Nov. 10			
	1	6	12	1	6	12	100	1	6	12	100
Untested..	\$1.00	\$5.00	10.00	\$.90	\$4.50	9.00	70.00	\$.70	\$4.00	\$7.75	65.00
Tested....	1.25	6.00	12.00	1.00	5.00	10.00		1 00	5.00	10.00	

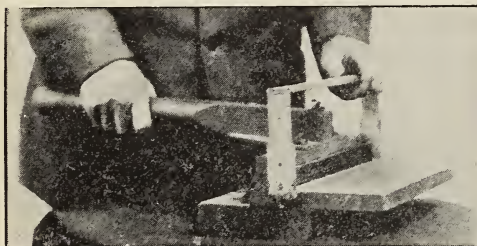
Select tested, April 1 till Nov. 1, \$2.00 each. Breeders, \$5.00 each. Bees by the pound, after May 10, 1 lb. for \$2.00; 10 lbs., \$18.00; 100 lbs., \$170.00. Add to these the price of queen or queens; safe arrival guaranteed within five days' journey of Mathis.

My three-banded Italians captured first prize again at Dallas State Fair and the Cotton Palace Fair at Waco. This speaks for itself. None better.

My Stock.—I secured the best stock obtainable; and when you pay more than my prices you are paying that much extra. I sell nothing but good queens. None better. I positively guarantee my queens to please. No foul brood or other diseases.

B. M. CARAWAY, MATHIS, TEXAS

References: Mathis First State Bank and The A. I. Root Company



WILDER'S FOUNDATION FASTENER

By which starters or full sheets of foundation are securely fastened in shallow or deep frames; satisfaction guaranteed. . Price \$2; wt. 8 lbs.

J. J. WILDER, . . CORDELE, GEORGIA

MILLER'S STRAIN ITALIAN QUEENS

By RETURN mail after June 5th to 10th, or money refunded. Bred from best RED-CLOVER strains in the U. S. In full colonies from my SUPERIOR BREEDERS; Northern bred for business; long-tongued; leather-colored or three-banded; gentle; winter well; hustlers; not inclined to swarm; roll honey in. One untested, \$1.00; 6, \$5.00; 12, \$9.00. One select untested, \$1.25; 6, \$6.00; 12, \$11.00. A specialist of 17 years' experience. . . Safe arrival and satisfaction guaranteed.

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Northern-bred Hardy Stock!

Italian queens from selected stock of the best strain of honey-gatherers for 1914. Quick delivery; cash with order. Prices: April till June, untested queens, \$1.00 each, 6 for \$5.00; in lots of 25 or more, 75 cts. each. Selected tested, \$2.00. Breeders, \$5.00.

W. B. DAVIS COMPANY, Aurora, Ills.



Get Your QUEENS Direct from Italy

May to September.—Tested, \$2.60; Champion Layers, \$4.00. Dead queens replaced if box is returned unopened. Discount to dealers or for quantities. Beautiful unsolicited testimonials. Honest dealing. For further particulars write to

MALAN BROTHERS

Queen-breeders
Lucerna, San Giavanna, Italy

Taylor's 1914 Three-banded ITALIAN QUEENS

Now ready to mail; 26 years' careful breeding for the best honey-gatherers. None better. Prolific, and honey-getters. We fill all orders promptly. Untested, \$1.00 each, or \$10 a dozen. Tested, \$1.25 each, or \$12.00 a dozen. Select tested, \$1.50 each or \$15.00 a dozen. Breeders, the best, \$5.00 each. Send all orders to

J. W. TAYLOR & SON, Beeville, Bee Co., Texas

DOOLITTLE & CLARK

are booking orders for choice Italian Breeding Queens, ready to be sent out about May 1. Send for circular.

MARIETTA, Onondaga Co., New York

Extra Select Tested Queens \$2.50 Each

Will make good breeders. Guaranteed to give satisfaction. Untested queens, 75 cts. each; \$7.50 per dozen. Tested, \$1.50. Choice breeders, \$5.00. Nuclei, \$1.25 per frame, good supply of bees. Half pound bees with queen, \$2.00. Bees, \$1.50 per lb., no queen; full weight. Full colony in eight-frame hive with queen, \$6.50; in ten-frame, \$7.50. Best mail and express service in the South. Only 12 hours to St. Louis, Mo.

THE STOVER APIARIES, MAYHEW, MISSISSIPPI

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Rearred from straight five-band mothers, mated with select golden drones, $3\frac{1}{2}$ miles from three-band apiary. These queens are large, vigorous, and prolific; the bees gentle and hustlers, and are noted throughout the U. S. as a disease-resisting strain. Purity of mating, safe arrival, and satisfaction guaranteed.

QUEENS	May 1st to June 1st			June 1st to July 1st			July 1st to Nov. 1st		
	1	6	12	1	6	12	1	6	12
Untested	\$ 1.25	\$ 6.50	\$11.50	\$ 1.00	\$ 5.00	\$ 9.00	\$.75	\$ 4.00	\$ 7.50
Select Untested	1.50	7.50	13.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select Tested	2.75	15.00	27.00	2.50	13.50	25.00	2.00	10.00	18.00

Breeders, \$5.00 to \$10.00.

Queens for export will be carefully packed in long-distance cages, but safe arrival is not guaranteed.

BEN G. DAVIS, SPRING HILL, TENNESSEE

QUEENS!

Quirin's Improved Superior Italian Bees and Queens. . . They are Northern Bred and are Hardy. . . Over 20 Years a Breeder.

	Before July 1st			After July 1st		
	1	6	12	1	6	12
Select untested ...	1.00	5.00	9.00	.75	4.00	7.00
Tested	1.50	8.00	15.00	1.00	5.00	9.00
Select tested	2.00	10.00	18.00	1.50	8.00	15.00
2-comb nuclei	2.50	14.00	25.00	2.25	12.00	22.00
3-comb nuclei	3.50	20.00	35.00	3.25	18.00	32.00
8-frame nuclei	6.00	30.00		5.00	25.00	
10-frame colony	7.50	38.00		6.50	32.00	
1-2 lb. pkg. bees	1.50	7.00		1.00	5.00	
1-lb. pkg. bees	2.00	10.00		1.50	8.00	

BREEDERS—the cream selected from our entire stock of outyards; nothing better. These breeders \$5.00 each.

Can furnish bees on Danzenbaker and L. or Hoffman frames. Do not write for lower prices even if you want 1000 queens or 100 colonies. Price is already low, considering the quality of our stock and prompt service.

Above price on bees by pound, nuclei, and colonies, does not include queen. You are to select such queen as you wish with the bees, and add the price.

No bees by pound sent out till first of June. Also nuclei and colonies, if wanted before June 1st, add 25 per cent to price in table.

Breeders, select tested, and tested queens can be sent out as early as weather will permit.

Send for testimonials. Orders booked now.

H. G. Quirin - the - Queen - Breeder
BELLEVUE, OHIO

BUY CARNIOLANS IN CARNIOLA

Pure Carniolan Alpine bees. Write in English for booklet and Price list. . . Awarded 60 honors.

JOHANN STRGAR, .. Wittnach
P. O. Wechelnor Feistritz, Upper
Carniola (Krain), Austria



ITALIAN QUEENS--NORTHERN BRED

Superior winterers; descriptive list free. Bees by the pound. Untested, \$1.00; select tested, \$1.50. Plans "How to Introduce Queens," 15c; "How to Increase," 15c; both for 25 c. **E. E. MOTT, Glenwood, Mich.**

Marchant's Island Bred Queens

Bred from selected mothers, and mated to isolated drones of a different strain. My aim is quality and not quantity. So if you want any of these choice purely mated three-banded Italian queens order now or you may not get them as I am going to rear only a limited number. No disease, and your money back if not satisfied. The A. I. Root Co. use my queens, which is proof of their quality.

No need to write for lower prices.

Reference, The American Exchange Bank of this city.

Prices—Untested, single, \$1.50; 6 for \$6.00; 12 for \$10.00; in lots of 25 or more, 75 cts. each. Select tested, \$3.00. Breeders, \$5.00 and \$10.00.

A. B. Marchant, . . Apalachicola, Florida

W. H. LAWS

is prepared to take care of all your queen orders the coming season.

Twenty-six years of careful breeding places Laws' queens above the usual standard.

My bees, in my own and in the hands of others, have taken first premiums at the leading fairs all over the United States; and, in the hands of single individuals, have gathered over a car of honey in one season.

Tested queens ready now. Each, \$1; 12 for \$10. Untested, after April 15, breeding queens, about fifty of the finest ready at any time; each, \$5.00.

W. H. LAWS, Beeville, Bee Co., Texas

Archdekin's FINE ITALIAN QUEENS THREE BANDED

Bred for Persistent Profitable Production of Honey. Prolific, hardy, gentle. The bee for pleasure or profit. One customer says, "Your queen soon had her ten frames running over with bees that are hustlers." Cells built in strong two-story colonies, and mated by best-known methods. No disease. Satisfaction guaranteed. Orders filled promptly. Ready May 20. Untested, \$1.00 each; six for \$5.50; dozen, \$10.00. Select tested, \$2.00 each.

J. F. Archdekin, Rt. 7, St. Joseph, Mo.

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Notices will be inserted in these classified columns at 25 cents per line. Advertisements intended for this department can not be less than two lines, and should not exceed five lines, and you must say you want your advertisement in the Classified Columns or we will not be responsible for errors.

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FOR SALE.—Finest quality buckwheat honey in cans and kegs. Clover honey all sold.
C. J. BALDRIDGE, Kendaia, N. Y.

FOR SALE.—No. 1 white comb, \$3.00 per case; fancy, \$3.25; 24 Danz. sections to case, six cases to carrier.
WILEY A. LATSHAW, Carlisle, Ind.

HONEY AND WAX WANTED

WANTED.—Comb, extracted honey, and beeswax.
R. A. BURNETT & Co., 173 So. Water St., Chicago.

WANTED.—Comb honey and beeswax. State what you have and price. J. E. HARRIS, Morristown, Tenn.

WANTED.—Honey, extracted and comb. Will buy or handle on commission. Beeswax—will pay highest price. HILBRETH & SEGELKEN, New York, N. Y.

WANTED.—Best grade white-clover and buckwheat extracted honey in cans or small barrels; the square five-gallon can, two cans to the case, preferred. Send sample, and quote best cash price delivered f. o. b. Medina, also f. o. b. Chicago, Ill. Can use quite a large quantity of both grades.

THE A. I. ROOT CO., Medina, Ohio.

FOR SALE

FOR SALE.—A full line of Root's goods at Root's prices.
A. L. HEALY, Mayaguez, Porto Rico.

FOR SALE.—Full line of Root's goods at factory prices.
E. M. DUNKEL, Osceola Mills, Pa.

FOR SALE.—Better hives for less money. Beekeepers' supplies and standard-bred Italian bees. Write for catalog.
A. E. BURDICK, Sunnyside, Wash.

FOR SALE.—Root's goods at factory prices. Fresh stock and prompt accurate service. Let's get acquainted.
L. W. CROVATT, box 134, Savannah, Ga.

FOR SALE.—Empty second-hand cans, two cans to the case; good as new; 25 cts. per case.
C. H. W. WEBER & Co., Cincinnati, Ohio.

Beekeepers, let us send you our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap.
WHITE MFG. CO., Greenville, Texas.

We are among the largest growers of alsike clover in this country, and offer good clean seed. Bushel, \$11.00; half bushel, \$5.75; peck, \$3.00.
C. J. BALDRIDGE, Homestead Farm, Kendaia, N. Y.

The A. I. Root Co.'s Canadian House, Dadant foundation, bees, queens, honey, wax, poultry supplies, seeds. Write for a catalog. THE CHAS. E. HOPPER CO., 185 Wright Ave., Toronto, Ontario.

FOR SALE.—Smokers and feeders slightly damaged by flood, at one-half catalog price. Bargains. Mention what you want and enclose remittance. We reserve right to substitute.

E. W. PEIRCE, Zanesville, Ohio.

FOR SALE.—22 1½-story second-hand Danz. hives, brood-frames, and section-holders, practically good as new; \$1.50 each, ½ of list price; 5 one-story, \$1.00. Bees were transferred; combs and frames boiled to melt wax. No disease.

A. MOTTAZ, Utica, Ill.

"Root" bee supplies, "American" honey-cans, and "Weed Process" foundation exchanged for beeswax and honey. Cash prices on request.

SUPERIOR HONEY CO., Ogden, Utah.
(Branch at Idaho Falls, Idaho.)

WANTS AND EXCHANGES

WANTED.—Old diseased combs in future. Must be cheap.
F. W. MORGAN, DeLand, Ill.

WANTED.—Bees in lots of 25 to 300 colonies, preferably within 250 miles of Detroit, Mich.
A. W. SMITH, Birmingham, Mich.

WANTED.—To sell untested queens from my superior clover-strain Italians in quantities.
I. F. MILLER, Brookville, Pa.

WANTED.—To exchange a 5 x 7 Pony Premo No. 6 camera, almost new, for bees.
S. G. STUART, box 59, Sugar Grove, Pa.

Will any subscriber who has a copy of GLEANINGS IN BEE CULTURE for February 1, 1914, which is in good condition, and which he is willing to spare, notify THE A. I. ROOT CO., Medina, Ohio?

WANTED.—Best offer on thirty 12-section safety cases of No. 1 to fancy clover-heartsease honey placed in our hands for disposal. Color light as average clover.
E. W. PEIRCE, Zanesville, Ohio.

WANTED.—To furnish every beekeeper within 500 miles of Boise, Idaho, with the best and cheapest bee supplies on the market, *quality considered*. Send me your order or a list of your requirements for 1914. Our catalog and price list will be mailed to you free. Order early and get the discounts.

C. E. SHRIVER, Boise, Idaho.

REAL ESTATE

Do you wish to buy rich, level, unimproved, heavy wild-grass land, close to town of two railroads, and only 200 miles from Chicago? Address owner for particulars. Price \$60 per acre. Box 42, Colo. Ia. 7752

Virginia orchards pay handsome profits. Good fruit lands in the famous apple belt \$15 an acre up. Easy payments. Send names of two friends interested in Virginia and receive our beautiful magazine one year free. F. H. LABAUME, Agr'l Agt. Norfolk & Western Ry., Room 246, N. & W. Bldg., Roanoke, Va.

BEEES AND QUEENS

Want to sell yard of bees, or get some one to run them.
J. ALPAUGH, Innerkip, Ontario, Canada.

Phelps' Golden Italian Queens will please you. C. W. PHELPS & SON, 3 Wilcox St., Binghamton, N. Y.

Pure Italian bees or their hybrids, in L. 10 frames, wired, full foundation, 1 or 100.
JOS. WALRATH, Antioch, Cal.

Golden Italian queens, good as any. Tested, \$1.00; select tested, \$1.25; untested, 70 cts.; dozen, \$8.00.
D. T. GASTER, Rt. 2, Randleman, N. C.

Connecticut queens, 3-banded Italians only; large and vigorous; ready May 15. Price list.
W. K. ROCKWELL, Bloomfield, Ct.

FOR SALE.—Fine Italian queens. See my large ad. in this issue.
J. F. ARCHDEKIN, Rt. 7, St. Joseph, Mo.

Golden yellow Italian queens my specialty. Untested, \$1.00; tested, \$1.50. Ready April 1. Safe arrival guaranteed. E. A. SIMMONS, Greenville, Ala.

Choice young queens now ready, \$1; six for \$5.
GEORGE H. READ, DeLand, Fla.

Phelps' Golden Italian Bees are hustlers. C. W. PHELPS & SON, 3 Wilcox St., Binghamton, N. Y.

Leather-colored Italian queens June 15. Circular free. No foul brood. One, 85 cts.; 6, \$4.50; dozen, \$8.00. D. G. LITTLE, Hartley, Iowa.

Three-frame nucleus for sale with queen, \$2.50; 3 or more, \$2.25, on Langstroth frames; commence to ship about May 15. W. H. STANLEY, Dixon, Ill.

Three-band Italian queens. Tested, \$1.00; untested, 75 cts. Ready May 15. S. CLICK, Mt. Jackson, Va.

Golden Italian queens, \$1.25 each; six for \$6.00; untested; 10th to 15th April. J. B. CASE, Port Orange, Fla.

FOR SALE.—Eight good colonies of Italian bees in Danzenbaker hives at \$4.50 each. HARRY C. KLAFFENBACH, Muscatine, Iowa.

FOR SALE.—40 colonies Italian bees in ten-frame Langstroth hives, wired Hoffman frames. No disease. J. B. RATCLIFFE, Amboy, Minn.

FOR SALE.—50 to 75 colonies, strong in bees and honey, free from disease, in L. hives, at Oakfield, Wis. Address B. W. WELLS, Grand Rapids, Wis.

Queens by return mail, three-band untested Italians, good as can be produced. No disease; 75 cts. each. W. D. ACHORD, Fitzpatrick, Ala.

FOR SALE.—150 colonies tested Italian bees; honey-house, tent-house, and complete extracting equipment. H. E. DIKE, Calabasas, Cal.

California Golden three-banded queens equal the best. Drop us a line. Mated, 75 cts.; 12, \$8; 50, \$32; 100, \$60; tested, \$1.25 to \$2.50. W. A. BARSTOW & CO., San Jose, Cal.

FOR SALE.—Golden Italian queens that produce golden bees; for gentleness and honey-gathering they are equal to any. Every queen guaranteed. Price \$1.00; 6 for \$5.00 WM. S. BARNETT, Barnett's, Va.

FOR SALE.—Italian bees, 1 lb. with queen, \$2.25; 1 frame with queen, \$2.00. Queens, 75 cts. each. Safe delivery guaranteed; 30-page catalog with beginner's outfit, for stamp. THE DEROY TAYLOR CO., Newark, N. Y. (formerly Lyons).

FOR SALE.—75 colonies of bees in 10-frame L. hives. Wintered in good shape. Reason for selling—have not the time to care for them. Write for particulars. ALBERT L. MARTIN, Leonardsburg, O.

QUEENS OF QUALITY.—Three-band, leather color, select untested, 75 cts. each; \$8.00 per dozen. Satisfaction guaranteed. Circular free. J. I. BANKS, Liberty, Tenn.

My queens are bred from imported mother. For gentleness and honey-gathering they are unexcelled. Untested, 1, 75 cts.; 6, \$4.25; 12, \$8.00. Safe arrival. Address W. J. FOREHAND, Ft. Deposit, Ala.

FOR SALE.—50 full colonies pure Italian bees in eight-frame dovetailed hives with Hoffman frames at \$6.00 each. All queens last-year Moore. Hives in good condition, painted. No disease. F. A. GRAY, Redwood Falls, Minn.

Queens and bees for sale.—See our large advertisement elsewhere in this journal, and read The A. I. Root Co. letter to us regarding our queens. Write at once for large bee and queen circular. THE PENN CO., Penn, Miss.

California Italian queens, three-banded and Golden; also bees by the pound for June and later delivery. Booked full till June 1. Circular and price list free. Write J. E. WING, 155 Schiele Ave., San Jose, Cal.

Golden Italian queens that produce golden bees, the brightest kind, gentle, and as good honey-gatherers as can be found. Each, \$1.00; six, \$5.00; tested, \$2.00; breeders, \$5.00 to \$10.00. J. B. BROCKWELL, Barnett's, Va.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey-gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; tested, \$3.00; breeders, \$5.00 and \$10.00. C. W. PHELPS & SON, 3 Wilcox St., Binghamton, N. Y.

Golden and three-band Italian and Carniolan queens ready to ship after April 1. Tested, \$1.00; 3 to 6, 95 cts. each; 6 to 12 or more, 90 cts. each. Untested, 75 cts. each; 3 to 6, 70 cts.; 6 or more, 65 cts. each. Bees, per lb., \$1.50; nuclei, per frame, \$1.50. C. B. BANKSTON, Buffalo, Leon Co., Texas.

Try Forehand's three-band Italian queens. They are raised from imported stock, unexcelled for honey and gentleness. One untested, 75 cts.; 6, \$4.25; 12, \$8.00. Send me your order; and if not satisfied I will return money. Safe arrival. N. FOREHAND, Rt. 2, Brewton, Ala.

Dunn's Golden Italian queens, bred strictly for business, that produce a strong race of honey-gatherers. March 1 to Oct. 15: One, mated, 75 cts.; 6, \$4.25; 12, \$8.25; 50, \$32.50; 100, \$60.00. Tested, \$2.00; breeders, \$10.00. L. J. DUNN, Queen-breeder, Box 337G, Rt. 6, San Jose, Cal.

FOR SALE.—40 colonies bees in 8 and 10 frame hives; comb and extracted honey equipment; total equipment for about 100 colonies, 2-fr. Cowan extractor, queen-rearing outfit, Alexander feeders, and numerous other things, \$300. Address MARTIN S. BACKER, Fulton, Mo.

Golden and three-banded Italians, ready March 1. They have been bred for three points—prolificness, gentleness, and honey-gathering qualities. Select untested, each, 75 cts.; six, \$4.25; 12, \$8.25; 50, \$32.50; 100, \$60.00. Tested, \$1.50; select tested, \$2.00; three-band breeders, \$4.00; golden breeders, \$5.00. GARDEN CITY APIARY CO., Rt. 3, Box 86, San Jose, Cal.

FOR SALE.—Swarms of young Italian bees in packages. Replace winter losses and strengthen weak colonies with healthy young bees; ½-lb. packages, 90 cts. each; 1-lb. packages, \$1.25 each; 2-lb. packages, \$2.45 each. Young untested Italian queens, the three-banded hustlers, 75 cts. each. We guarantee safe arrival. No disease. For large quantities write for wholesale prices. BROWN & BERRY, Hayneville, Ala.

BEEES AND QUEENS.—Queens bred from Doolittle's best stock, untested, 60 cts. each; \$6.50 per dozen; \$50 per 100. Same stock of year-old queens removed from our colonies to prevent swarming, 50 cts. each; \$5.40 per dozen; \$40 per 100. Delivery guaranteed. Nuclei, two-frame, \$1.50; three-frame, \$2.00. Add price of above queens wanted. We have a rare bargain of apiary of several hundred colonies of bees for sale on easy terms. Particulars on request. SPENCER APIARIES CO., Nordhoff, Cal.

Famous North Carolina bred Italian queens for sale.—(Red-clover three-banders); honey-gatherers, good as the best. Strictly reared from Geo. B. Howe's best breeders, mated with Root's, Moore's, Davis' select drones; bees that get the honey; free of disease. Untested, 1, 75 cts.; dozen, \$7.50. Select untested, 1, \$1.00; dozen, \$9.00. Tested, 1, \$1.25. Select tested, \$1.50. Extra select tested, \$2.00. Breeders, \$3.00 to \$5.00. H. B. MURRAY, Liberty, N. C.

FOR SALE.—Early swarms at fall prices; ½ lb. bees, \$1.00; 1 lb. bees, \$1.50. Add price of queen if wanted. Untested three-band Italian queen, 75 cts. each; tested Italian queens, \$1.25 each. These are bred from best honey-gathering strain. No disease. Safe arrival and satisfaction guaranteed. This is undoubtedly the best way for Northern honey-producers to increase and improve their stock. Delivery begins about April 5. Capacity, 40 swarms per day. W. D. ACHORD, Fitzpatrick, Ala.

Three-banded Italian queens: Before July 1, untested, 1, \$1.00; 6, \$5.00; 12, \$9.00; select untested, \$1.25; 6, \$6.25; 12, \$11.00. After July 1, untested, 1, 75 cts.; 6, \$4.00; 12, \$7.00; select untested, 1, \$1.00; 6, \$5.00; 12, \$8.50. One-frame nucleus, 75 cts.; two-frame, \$1.50; three-frame, \$2.25. To each nucleus add price of queen. Our queens are reared in a locality where there has never been disease, and reared from strong vigorous colonies. The apiary is under most competent supervision. Safe arrival and satisfaction guaranteed.
HORNER QUEEN & BEE CO., Ltd., Youngsville, Pa.

Guaranteed purely mated 3-band Italian queens, J. E. Hand strain, bred for gentle, prolific, honey-gathering, wintering, and long life. State Inspector's certificate. Commence mailing young queens about May 15. Before July 1, select untested, one, \$1; 6, \$5; tested, one, \$1.25; 6, \$7; select tested, one, \$1.75; 6, \$9. Breeders, \$5. After July 1, select untested, one, 75 cts.; 6, \$4; 12, \$7; tested, one, \$1; 6, \$5; 12, \$9. Select tested, one, \$1.25; 6, \$7; 12, \$13. Breeders, \$4; 10 per cent discount on 30 days' advance orders on all queens to be mailed after June 20. Safe delivery guaranteed in United States and Canada. Reference, First National Bank.
J. M. GINGERICH, Arthur, Ill.

POULTRY

FOR SALE.—Thoroughbred Sicilian Buttercup eggs, \$1.50 for 15. **D. PATTER, bx 199, Rt. 4, Ashtabula, O.**

Buckeye Incubators, Kant Krowd Hoover, let me tell you about them. **E. O. WALTZ, Medina, Ohio.**

FOR SALE.—Sicilian Buttercup eggs for hatching, \$1.50 per 15 eggs.
L. S. GRIGGS, 711 Avon St., Flint, Mich.

Stock and eggs for sale, all leading varieties; also geese and Belgian hares. Catalog free.
LEVI STUMB, Richland Center, Pa.

Pure-bred Indian Runner ducks, snow-white eggs, 15 for \$1.00; 100 for \$6.00. **J. C. WHEELER, 921 Austin Boul., Oak Park, Ill.**

Sicilian Buttercups. One utility flock. Eggs, \$1.00 per 15; unsatisfactory hatches replaced at half price. **WALTER M. ADAMA, Berlin, Mich.**

LEGHORNS.—Eggs for hatching. S. O. W. Leghorns, \$5.00 per 100; \$1.00 per 15. Send for catalog.
WOODWORTH FARM, Wilton, Ct.

Eggs.—20 for \$1.00; leading varieties prize poultry, pigeons, hares, etc. Booklet free. Large illustrated catalog, 10 cts. **F. G. WILE, Telford, Pa.**

S. C. White Minorcas, \$3.00 per 15; R. C. Buff Leghorns, S. C. Brown Leghorns, and Partridge Wyandottes, \$1.00 per 15.
HILLCREST FARM, Winchester, Ind.

Corning Strain direct, S. C. W. Leghorn eggs and day-old chicks for sale. The strain that weigh, lay, and pay. Also B. P. Rocks at farmer's prices.
F. J. ARMSTRONG, Nevada, Ohio.

Runner Duck Eggs.—Fawn, white-egg strain, \$1 per 12 eggs. Single-comb R. I. Red eggs, and day-old chicks. Tompkins strain.
SARAH WIDRIG, Rt. 29, Burt, N. Y.

S. C. W. Orpington eggs, 15, \$3.00; 30, \$5.00; direct from Kellerstrass progeny of "Peggy, \$10.000 hen." Also Indian Runner duck eggs, 10 cts. each, white and fawn. **I. F. MILLER, Brookville, Pa.**

Royal Blue Orpingtons, Nicholson strain. Blue Andalusians; also pure-white Indian Runner ducks, blue-ribbon winners. Eggs for sale. Write me for special prices and description.
H. R. ROHR, Buckhannon, W. V.

Runner and Pekin Ducklings and hatching eggs. White-egg strain, Blue-ribbon stock. Also drakes. Catalog for stamp.

THE DEROY TAYLOR CO., Newark, N. Y.

FOR SALE.—Eggs, 15 for \$2; cockerels, \$3; "blue-ribbon stock." Columbian Wyandottes and Light Brahmas. Twenty years a breeder.

AARON J. FELTHOUSE, Elkhart, Ind.

Eggs from a heavy-laying strain of White Indian Runner ducks, \$2 per 13, \$10 per 100. In the hottest competition the past winter I took every blue ribbon wherever shown. I guarantee a pure-white-egg strain. **WM. DROMMS, Rt. 2, Schenectady, N. Y.**

MISCELLANEOUS

FOR SALE.—Pheasants and eggs.
S. V. REEVES, Haddonfield, N. J.

PRINTING.—250 note-heads, 250 envelopes, \$1.50; 500, \$2.25; 250 business cards, \$1; 500, \$1.50. Printed to your order. Good quality stock. Satisfaction guaranteed. Address
GEORGE GOVER, Bellevue, Ohio.

HELP WANTED

WANTED.—Being disappointed in my help not coming after hiring them, I should like at once a young man for the season of 1914.

FRANK C. ALEXANDER, Delanson, N. Y.

WANTED.—Reliable man of good habits to work with bees the coming season. State age, experience, and wages first letter.

THE ROCKY MOUNTAIN BEE CO., Forsyth, Mont.

WANTED.—Man (married preferred) experienced in queen-raising; employment by the year on a salary and percentage.

OGDEN BEE AND HONEY CO., Ogden, Utah.

SITUATION WANTED

Position wanted by expert beekeeper. Address
B. W. WELLS, Grand Rapids, Wis.

BEEKEEPERS' DIRECTORY

If you need queens by return mail send to **J. W. K. SHAW & Co., Loreauville, Iberia Parish, La.**

Nutmeg Italian queens, leather color, after June 1, \$1.00 by return mail. **A. W. YATES, Hartford, Ct.**

Well-bred bees and queens. Hives and supplies.
J. H. M. COOK, 70 Cortlandt St., New York.

QUEENS.—Improved red-clover Italians bred for business June 1 to Nov. 15, untested queens, 75c each; dozen, \$8.00; select, \$1.00 each; dozen, \$10; tested queens, \$1.25 each; dozen, \$12.00. Safe arrival and satisfaction guaranteed.

H. C. CLEMONS, Boyd, Ky.

SPECIAL NOTICES

BY OUR BUSINESS MANAGER

CHICAGO BRANCH IN NEW LOCATION.

Our Chicago branch office, which for the past five years has been at 213 Institute Place, near Chicago Ave. station of the Northside elevated railway, is now located at 215 W. Ohio St., just six blocks south of the last location, and two blocks south of the location previous to five years ago. We are now on the second floor.

A BARGAIN IN ROTARY PUMPS.

We have a number of half-inch rotary pumps which, for thick honey, have proven not quite adequate in rapid work, but which for water or other liquids will handle two gallons per minute at 100 revolutions. Weight, without pulley, 5 lbs. Will furnish them at special price of \$5.00 each while present stock lasts.

A Preacher to the Nation

"Mount Vernon is the greatest thing in this country," said a man who had just returned from a visit to Washington, and the home of our first President.

He is a person who has traveled both here and abroad, and who all his life has been accustomed to wealth, beauty, and comfort. In his native city he can see every day a dozen residences that cost more than Washington's simple house, and that occupy more ostentatious grounds; but in none of them can he or any other person find the quality that impressed him in Mount Vernon.

Nearly every visitor to the home of our first President is affected in the same way. It is not the extent of the place, for it measures only two hundred acres, nor is it the size and elegance of the house, or the character of the furniture within it; rather is it an atmosphere of dignity, of calm, of restfulness—the absence of ostentation. Here lived one of the great historic figures of all time, and because he was great—because he had personality—he impressed himself on the house in which he lived, and on the grounds on which it stands. It is Washington himself that we feel at Mount Vernon.

To one who, in this day, strolls through the well-kept buildings, and looks across the green lawns to that beautiful vista beyond the Potomac, it seems incredible that the noble place should ever have been hawked about the country in the vain effort to find a purchaser; that Congress should have refused to buy it; that it came, indeed, perilously near to falling into the hands of a man who wished to make "a fashionable beer garden" of it. To the patriotic women of the country, and especially to a patriotic woman of the South, we are indebted, as a nation, for this national shrine.

It is never possible to gauge the influence of such a monument. Those who feel most deeply are usually the least ready with words to express their feelings, and many are conscious of no impression except that of mild interest in a historic survival. There is, nevertheless, a constant elevating influence in every acre of the sacred soil of Mount Vernon, and in every other place that holds up to an ostentatious age a picture of the simple dignity that our forefathers knew so well, and that we find it so difficult to attain.—*The Youth's Companion*.

I am having good success making foundation on the mill I bought of The A. I. Root Co. a few weeks ago. Oh how I can now help my bees along making comb! God bless the inventor of this machine. May he live a long and happy life, is the prayer of a Mississippi beeman.

Rosetto, Miss., March 27. J. P. MCCRARY.

PUBLICATIONS ON BEE CULTURE

(Please use coupon below, checking the numbers of items wanted.)

The pamphlets and booklets listed below are of more than ordinary interest.

- 1 MY FIRST SEASON'S EXPERIENCE WITH THE HONEYBEE. By the "Spectator," of the *Outlook*, of New York. A ten-page leaflet detailing the experiences of this well-known writer. You will read the leaflet through before you lay it down. Free.
- 2 THE BEEKEEPER AND FRUIT-GROWER. A 15-page booklet giving actual facts regarding the value of bees to fruit, and showing how beekeeping may be doubly profitable to the fruit-grower. Fruit-growers are realizing as never before the necessity of having honey-bees in close proximity to their blossoming fruit. Free.
- 4 CATALOG OF BEEKEEPERS' SUPPLIES. Our complete catalog will be mailed free to any address on request.
- 7 SPRING MANAGEMENT OF BEES. A 14-page booklet detailing the experiences of some successful beekeepers, and giving instructions on this oft-times perplexing matter. Price 10 cts.
- 8 HABITS OF THE HONEYBEE. By Dr. E. F. Phillips. A somewhat scientific handling of the habits and anatomy of the bee. Price 10 cents.
- 9 HOW TO KEEP BEES. A book of 228 pages detailing in a most interesting manner the experiences of a beginner in such a way as to help other beginners. Price \$1.00 postpaid.
- 10 THE A B C OF BEE CULTURE. A complete encyclopedia of bees, of 712 pages, fully illustrated, \$2.00 postpaid; half leather, \$2.75.
- 11 GLEANINGS IN BEE CULTURE. A 64-page illustrated semi-monthly magazine—the leading exponent of bee culture in this country. Ten cents per issue, but to new subscribers we will furnish it six months for 25 cents.
- 12 BACK-YARD BEEKEEPING. Six interesting lessons written in readable newspaper style. Many facts encouraging the "city-bound" man or woman with the back-to-the-land longing. Free.
- 13 THE BUCKEYE BEEHIVE, or the management of bees in double-walled hives. Of special interest to the amateur beekeeper. The most complete booklet we publish for free distribution. Illustrated throughout; 84 pages.
- 14 ADVANCED BEE CULTURE. A beautifully printed book. Best plate paper has been used throughout its 200 pages, with the result that its many fine illustrations are unusually clear in every detail. Bound in attractive and substantial cloth; \$1.00 per copy, postpaid.

The coupon below may be used as an order sheet by properly checking the numbers of items wanted, and adding your signature, and remittance if required.

CUT COUPON HERE

The A. I. Root Co., Medina, Ohio.

Please send me the items checked. I enclose

\$.....to cover the cost.

1	2	4	7	8	9	10	11	12	13	14
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Name

Street Address or R. F. D.....

Town

B. C. State.....

Convention Notices

The Beekeepers' Association of Mercer County, W. Va., met at Matoaka, W. Va., the third day of this month. This was the most interesting meeting we have ever had. We now have an organization with H. I. Coot, Dott, W. Va., President; W. R. McComas, Matoaka, W. Va., V. P.; and H. E. Cook, Matoaka, Secretary. Can any one tell us whether there is any other organization of beekeepers in West Virginia? We are desirous of making our organization cover the State. Our present membership is fifteen. Our next meeting will be at Matoaka, May 8. Dott, W. Va., April 14. H. I. COOK, Pres.

PANHANDLE BEEKEEPERS' ASSOCIATION GOES ON RECORD AGAINST SPRAYING FRUIT TREES WHILE IN BLOOM.

We have a clipping from the *Wheeling Intelligencer* that informs us that the semi-annual meeting of the Panhandle Beekeepers' Association was held a few days ago (date not given) in the parlors of the Grand Central Hotel of that city. The following officers were elected for the ensuing year:

President, Henry Lewedag, Wheeling; Vice-president, L. C. Seabright, Blain, O.; Secretary and Treasurer, John Rood, Bellaire, O.

We are pleased to note that the Association went on record as deploring the action of many fruit-growers in spraying fruit trees while in bloom. Recommendations for spraying seasons contained in State and Government bulletins were heartily endorsed.

IOWA SUMMER MEETINGS.

The Iowa Beekeepers' Association has arranged for a series of summer meetings, the first of which will be held on May 19 and the last on Aug. 20. Most of these meetings will be in the nature of picnics. Everybody will bring a basket of lunch, the wife and babies, and enjoy the day.

The first field day will be held near McGregor or North McGregor on May 19. It is desired that the honey-producers of Iowa and Wisconsin meet together on this occasion, and McGregor has been chosen as a convenient point. N. E. France, of Wisconsin, will be the principal speaker, and a large attendance is expected. Beekeepers from considerable distances have already signified their intention to be present.

At Colo, June 10, the Ladies' Aid Society will serve dinner at a reasonable price, and the field meet will be held at the Hall home apiary, which is within easy reach of the station. Mr. Hall's big honey-house will be used for a convention hall in case of rain. Professor C. E. Bartholomew, of Ames, will give the principal address. So much interest has been manifested in the Hall methods of honey production that a good attendance is assured.

At Forest City, June 17, the meeting will be held on the grounds of Hon. Eugene Secor, former president of the National, and one of the best-known beekeepers of the middle West, who has kept bees continuously in his present location for forty years. It is hoped that a liberal representation of Minnesota beekeepers will be present here, as it is but a few miles from the State line.

At Des Moines, July 15, a big day is planned at the Dustman apiary, which is convenient to the car line. The committee is planning a series of interesting demonstrations. The central location and splendid railroad facilities from all directions make Des Moines very easy of access.

At Mt. Pleasant, July 28, is to be held the fifth field meet of the season. The committee is already making plans for the program with C. P. Dadant, of Illinois, as one of the speakers. Beekeepers from Western Illinois and Northeast Missouri will find Mt. Pleasant easy to reach, and should plan to come.

On August 12, at Clarinda, the friends from Nebraska and Missouri will find a point easy of access, and the Strong apiary will be the place of meeting. Mr. Strong, the well-known queen-breeder, has been keeping bees for almost half a century, and will demonstrate his methods of queen-rearing. The program will be announced later.

For several years the beekeepers in the vicinity of Sioux City have held a tri-state meeting, the date of which this year is set for Aug. 20. Friends from South Dakota and Nebraska meet with Iowa beekeepers for an annual picnic at Riverside, and the committee in charge always plan an interesting time.

A meeting will also be held at the Coverdale apiary, at Delmar, the date of which will be announced later. Coverdale has become famous as a grower of sweet clover as well as being an extensive honey-producer. In planning these meetings the association has tried to place them so that at least one would be within reach of every Iowa beekeeper; and we hope note will be made of the times and places, and that friends from other States will attend in goodly numbers. F. C. PELLETT.

FIELD-DAY DEMONSTRATION TO BE HELD AT FORKS OF CREDIT, ONT., CAN., MAY 25, 1914.

The First Canadian National Field Day Meet will be held on Victoria day, May 25, 1914, at the apiary of Mr. H. G. Sibbald, past president of the Ontario Beekeepers' Association, at the Forks of the Credit, Ontario.

This great event, which has slowly been gathering force since last December, has now reached that point where the various committees which have been working on the plan feel that it will surpass anything heretofore attempted in the British Empire.

Plans have been laid for handling a great crowd. Members of committees will be at the various stations from the city up to assist the stranger and bid him welcome. Special coaches will be placed on the train for the beekeepers' accommodation, and the good old-fashioned farmers' hayrack will convey the jolly crowd to the yard, some half mile away.

All the beekeepers within reasonable distance are requested to bring their well-loaded baskets, and prepare for two meals (noon and evening), to take care of those who come from long distances.

To the beekeeper confined within the narrow limits of city life this field day and picnic offers a day of relaxation and freedom from the cares and worries of business, while the producer from the country is afforded an opportunity to meet the city man.

The editors of *GLEANINGS* and the *American Bee Journal* have consented to be present and take a part in the work of demonstration, while our own fair Province will have its corps of brilliant men on the "firing line."

For a day's outing no spot in all this magnificent country of ours can surpass the beautiful Forks. Poets have sung its praises; historians have recorded its beauties, but the tongue of man cannot justly describe the sublime and majestic scenery.

Then, dear beekeeper, lay aside your cares and anxieties, come along and bring your families, and enjoy the pleasure of friendly intercourse with the great men of our ranks.

The committee herewith present the program with a feeling of pardonable pride. Never in the history of beekeeping in Canada has such a brilliant galaxy of men been brought together for such a purpose. In the evening of life, while dwelling on sweet thoughts of the past, may this great field meet induce you to say:

"Backward, turn backward, O time, in thy flight,

Make me a child again just for to-night."

PROGRAM.

- C. P. R. train leaves Union at 7:20 A. M.; arrives at Forks of Credit at 9:25 A. M.
- 10:00 A. M.—General inspection of apiary, honey-house appliances, etc.; conducted by Mr. Sibbald.
- 10:45 A. M.—Mr. J. L. Byer, President of the O. B. K. A., will officiate.
- 11:30 A. M.—Greetings to all sister organizations and delegates.
- 12:00 M.—Lunch, provided by ladies.
- 1:15 P. M.—Mr. C. P. Dadant, editor of the *American Bee Journal*.
- 2:15 P. M.—Mr. Morley Pettit, Provincial Apiarist.
- 3:00 P. M.—Mr. E. R. Root, editor *Gleanings in Bee Culture*.
- 4:00 P. M.—Mr. M. B. Holmes, Athens, Ont., director O. B. K. A.
- 4:25 P. M.—Mr. Wm. Couse, Streetsville, Ont.
- 5:15 P. M.—Lunch, toasts, greetings, etc.
- Train leaves Forks at 6:15 P. M.; arrives at Union at 8:25 P. M.

Ladies' committee (white badge), Mrs. Sibbald, Pres. Please leave baskets with ladies' committee. Information committee (blue badge), all stations. Field committee (yellow badge), Mr. Wilson, President. Fare, round trip, \$1.15.

G. R. CHAPMAN, Pres.

CHAS. E. HOOPER, Sec.
Toronto, Ont., April 3, 1914.

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could live out and verify all the wonderful things
told therein.

Here is what Others say:

It is very interesting, not only from a sentimental
but from a practical standpoint.
Guelph, Can., April 21. MORLEY PETTIT.

The dear old man was one of God's very own;
and to have this reminder of him on my book-shelf
will give me much pleasure.
Sacramento, Cal., April 18. A. J. COOK,
State Commissioner of Horticulture.

It seems good to read again this charming work.
It must ever remain to the American beekeeper a
classic, both instructive and fascinating.
Middlebury, Vt., April 15. J. E. CRANE.

It is well to have Langstroth reprinted; and if all
would read it, many would be saved from going over
well-thrashed straw. I have several of the early edi-
tions, and am glad to add this to them.

ARTHUR C. MILLER.
Providence, R. I., April 20.

This will preserve the original for future genera-
tions.

Marietta, N. Y., April 16. G. M. DOOLITTLE.

I am much pleased with the reprint which has
come to hand.

Amherst, Mass., April 15. B. N. GATES.

I have the copy of the reprint of the 1853 Lang-
stroth. I have long admired the writings of Lang-
stroth, and had read his original edition with great
interest. It is especially interesting in that he dis-
cusses some of the points that are annually "dis-
covered" by others who are unfamiliar with the
literature on bees. I feel that it will benefit Ameri-
can beekeepers to become familiar with this book,
and trust that it will have a wide distribution. The
book is a classic, and should be known to all good
beekeepers.

Washington, D. C., April 16. E. F. PHILLIPS.

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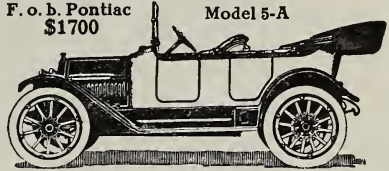
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